

THE PHONOLOGY  
OF THE  
VERBAL PHRASE  
IN PUNJABI (DOABI)

by

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## ABSTRACT

This thesis is an attempt to study the phonology of the verbal phrase in Punjabi (Doabi dialect) as spoken in and around Phagwara. A brief introduction to the area, the language under study, and an appraisal of the work already done is followed by a survey of the theoretical approach adopted. Prosodic approach to the phonological analysis of language as propounded by J.R. Firth and developed by his colleagues and students, popularly known as "Prosodic Analysis", has been followed in this thesis.

After delimiting the verbal phrase, the Verb word etc., junction features are studied in some detail in Chapter 2. Chapter 3 contains the study of Intonation as a clause prosody. Two main systems have been set up, each with a number of sub-systems. In Chapter 4, the study of tonal phenomena as applicable to Verb words, has been included. Doabi is a three tone language, where tone is a word prosody. A three-term tonal system has, therefore, been set up. Pitch features have been considered alongwith the phonation features and the word-initial and the word-final features that serve as exponents of each term of the system.

Chapter 5 is a study of the Initial features of the initial syllable of verb words. A two-term prosodic system has been set up. This is followed by a discussion of the characteristic features of the root-final syllable in Chapter 6.

Verb words have been classified as belonging to different prosodic groups on this basis. A discussion of the features drawn from the final syllable of the root and the initial syllable of inflexion will be found in Chapter 7 in terms of a five-term Juncture System. This chapter also contains statements of the phonetic exponency for the different prosodic terms of the Final System as applicable to the Intra-verbal Junction. The -C and V Phonematic Systems for the root-final are discussed in chapter 8 along with V Phonematic Systems as relevant to suffixes; and 8.4 comprises an account of the Auxiliary sub-category of verb.

Three appendices listing the three sub-categories of Verb - Main, Operator, Auxiliary - are followed by the fourth containing Instrumental evidence. A select bibliography of works consulted appears at the end.

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## CHAPTER I

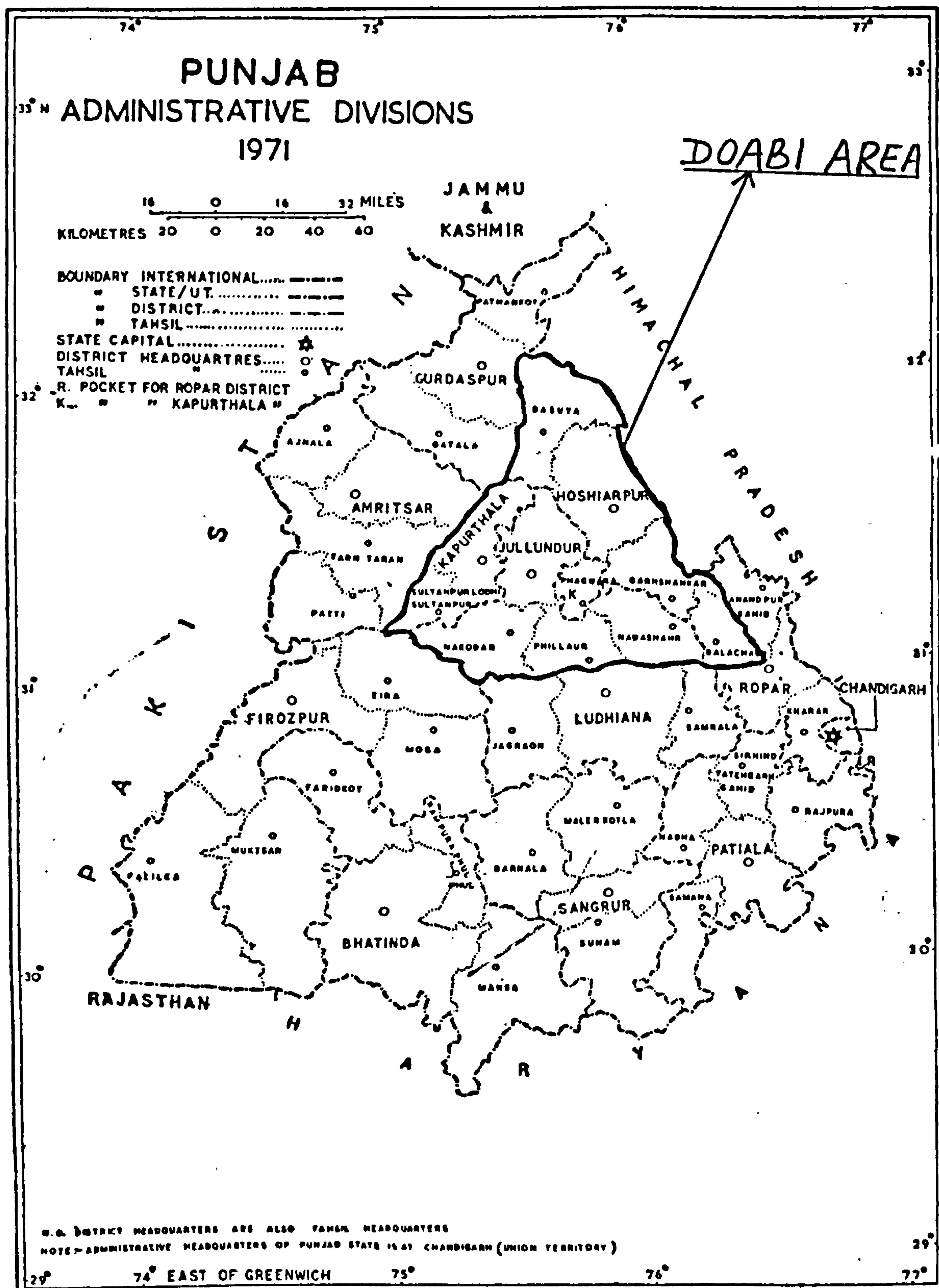
1.0. INTRODUCTION: The dialect of Punjabi under study in this thesis is known as Doabi. It is mainly spoken in the Districts of Jullundur, Hoshiarpur and Kapurthala in the state of Punjab in India.<sup>1</sup> Doabi is also used as mother tongue by a large number of Punjabi immigrants settled in the U.K., the U.S.A., Canada and some of the countries of the Middle East. The number of Doabi speakers outside India is quite a sizeable one, the largest being in the U.K., followed by Canada. The Doaba area, bounded on either side by the river Satlej and the Beas, was also known by the name Doaba Bist-Jullundur before 1947, i.e., in the days prior to the partition of the country - in the days of the British Raj.

1.1 The area is highly industrialised. Affluent farmers have taken up mechanical farming techniques, small scale industrial units are found in almost every town or village in the vicinity of the Grand Trunk Road. Every single village is electrified, and connected by a metalled road. The percentage of school-going children is very high, in some cases even a hundred per cent. A large number of degree colleges has sprung up since 1966, mostly in the rural areas. There is one such college within a distance of approximately every ten miles. Women do not lag behind their counterparts in any way, in the process of education. The number of co-educational colleges apart from separate ones, for women only, is also quite large.<sup>2</sup>

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1. See map. The population in the Punjab is about three million, exact figures being 29,36,168 according to 1971 Census. (Census of India 1971, series 1, Punjab, Part II-A. pp.26-27.

2. The rate of literacy in the area is 38.76% against 33.39% for the whole state. (Ibid.)





Industrialisation, a very high rate of literacy, mechanised farming and the highest per capita income in the country have thus changed the nature of the speech community in India. The rate of mobility is also very high because of better communication and transport facilities. All these factors are having their impact on the way of life and thus on the linguistic behaviour of the inhabitants of the Doaba area. A large number of people from other parts of the Punjab and other adjoining states visit this area for trade, livelihood and various other reasons. The major chunk of the labour population hails from Eastern U.P. for industry and from Rajasthan for Road building. Farm labour is also from the adjoining states. This does not, however, have much of an influence on the linguistic behaviour and performance of the Doabi speakers. Informants representative of Doabi speech are easily available both from the rural as well as from the urban areas.

The changes found in the speech habits of the Doabi immigrants in the U.K. and Canada are, however, not very significant. The use being limited to near and dear ones confined to home and hearth. To compare the two varieties of Doabi, one spoken in the Punjab and the other, thousands of miles away, would, it is thought, make an interesting study, but no such attempt is made in this thesis to this effect.

This thesis is mainly based on the analysis of my own speech. Other Doabi speakers have been consulted in large numbers as and when the need was felt. Doabi has been my own mother tongue throughout. The variety of Doabi speech used

in the present study is representative of Phagwara area. There may be some minor variations in the type of speech being used in Hoshiarpur and for that matter in some parts of district Jullundur also. No attempt has so far been made to pin point any of these in any systematic manner. For this very purpose the results of the linguistic survey carried out by the Department of Anthropological Linguistics, Punjabi University, Patiala are still being awaited. Under the circumstances it can safely be assumed that the speech of Phagwara area is representative of the Doabi speech community to a large extent. The scope of minor differences here and there is not ruled out altogether and has been taken note of, wherever necessary. This particular variety of speech is, however, fully understood and taken as normal Doabi speech in the districts of Jullundur, Hoshiarpur and Kapurthala.

1.2 Previous studies: Some work has already been done on the linguistic study of the different dialects of Punjabi. The work was initiated by T. Grahame Bailey with the publication of PANJABI PHONETIC READER in 1914 from London. He gave a description of the dialect of Punjabi spoken in Wazirabad. He found that "variations in the tone of the voice form a very remarkable feature of Panjabi pronunciation". According to him, "There are two special tones, apart from the ordinary tone of speaking. They occur in stressed syllables only". (p.xv) He was followed by a long line of scholars like, Mohan Singh Dewana (1933), Banarsi Dass Jain (1934). Some other remarkable contributions in the first half of this century were those of Sir George Grierson (1916), Pandit Sardha



Ram Phillauri (1909) and Bansi Lal Gupta. In the beginning of the second half of the century, however, systematic study of the different languages of India was taken up. Kali Charan Bahl published 'TONES IN PUNJABI' in 1957, in this paper Bahl presented a description of the tonal system of the dialect of Amritsar city popularly known as Majhi. 'Tonal variations in context' were not taken up even by Bahl. H.S. Gill presented two papers to the Linguistic Society of India (LSI) Poona in the months of March and November, 1958. The dialect under discussion once again being Majhi. Then, in 1960 appeared Gill's paper 'Panjabi Tonemics' in which he studied "some of the numerous variations of the tonal contours in different environments taking the sentence as the basic unit of study". "A Reference Grammar of Panjabi" (1963) by Gill and Gleason includes some of Gill's previous work. P.S. Walia in 1967 published 'A Multidimensional Polysystemic Description of the Verbal Group in Panjabi'. The language for study being no particular dialect as such. B.S. Sandhu followed him in 1968 with his 'Descriptive Grammar of Puadi'. Then appeared a revised version of Joshi's M.Phil. thesis under the title 'Pitch and related phenomena in Punjabi' in 1973 in Pakha Sanjam vol. VI. In the same journal Puar (1974) published 'A Grammatical Analysis of the Finite Verbal Phrase in Punjabi'. Puar chose his examples from a literary text. In the field of Punjabi linguistic studies, besides the above-mentioned, the following are worth mentioning here:

E.B.A. Awan 1974, B.R. Gupta 1975, Atam Singh 1975 and M.S. Gill 1975.

1.3 As is clear from the above account, the only study that took up the Doabi dialect of the Phagwara area was my own (Joshi 1970). Apart from that no other systematic phonological study of Doabi has so far been undertaken. The Majhi dialect, of the Amritsar area, has received a very full treatment by Gill and Gleason in their 'A Reference Grammar of Panjabi'; but there is no comparable study of the Doabi dialect, in accordance with a modern linguistic theory. Thus the present attempt, the phonological analysis of the verbal phrase, has been taken up because of two reasons: there is already a study of the verbal phrase in Hindko, the Punjabi dialect of the Peshawar area, in Dr. E.B.A. Awan's thesis 'The phonology of the verbal phrase in Hindko', and, in addition, the theory applied in that thesis is 'prosodic analysis'. It is 'prosodic analysis' that has also been followed in the present thesis. With both theses written in accordance with the same theory, comparison could be readily made between the two dialects.

Apart from Awan's thesis (Awan, 1974) 'Prosodic Analysis' is a new theoretical treatment of the verbal phrase in Punjabi. Since Hindko is a two-tone dialect, and tone is a prosody as stated by Awan for the verbal phrase as a whole, whereas Doabi is a three-tone dialect, and I state tone as a word prosody, a comparison of part of these two dialects will be of a special significance. It is in the verbal phrase that the interrelations of word tone and clause intonation can most usefully be studied.

The scope of the thesis does not permit us to discuss in detail the theoretical approach being followed. What follows is only a brief introduction to the theory of phonological analysis put forward by the late Prof. J.R. Firth,



generally known as 'prosodic analysis'. Only the most characteristic features of the theory are being mentioned in the following section.

1.4 THEORETICAL APPROACH: As already stated above, Firth's theory of phonological analysis is generally known as 'prosodic analysis'. The essentials of this theory have been stated as follows:

"The aim of prosodic analysis in phonology is not that of transcription or unilinear representation of languages, but rather a phonological analysis in terms which take account not only of paradigmatic relations and contrasts, but also of the equally important syntagmatic relations and functions which are operative in speech .... Prosodic analysis is, in fact, an abbreviated designation of an analysis that makes use of two types of element, Prosodies and Phonematic Units;... Phonematic units refer to those features, or aspects of the phonic material which are best regarded as referable to minimal segments having serial order in relation to each other in structures. In the most general terms such units constitute the Consonant and Vowel elements or C and V units of a phonological structure .... a great part, sometimes the greater part, of the phonic material is referable to Prosodies, which are by definition, of more than one segment in scope or domain of relevance<sup>1</sup>, and may in fact belong to structures of any length,.... We may thus speak of syllable prosodies, prosodies of the syllable groups, phrase or sentence part prosodies, and sentence prosodies; and since grammatically defined elements may also be characterized by prosodic features ... we may have in addition word and morpheme prosodies."

(Robins, 1957)

John Lyons in 1962 says that,

"the prosodist describes the data in terms of two fundamentally different kinds of elements, phonematic units and prosodies, the former being ordered with respect to one another in terms of successivity, the latter having as their 'domain' a variable, but determinate, number of phonematic units...."

(John Lyons, 1962, p.128)

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1. But c.f. section 1.4.1 below.

1.4.1 PHONETIC EXPONENTS AND GRAMMATICAL CATEGORIES: The phonetic exponents of prosodies (terms of a prosodic system) are generally features drawn from sequences of two or more sounds (or segments) because the basis for recognizing them is generally syntagmatic; but it would also be possible, though less usual, to have feature of a single sound, or a single sound itself, as the phonetic exponent of a prosodic term where the basis for setting up that prosodic system is not syntagmatic but grammatical, and used to provide a phonological exponent of a grammatical category. (c.f. Sprigg, 1963, p.80). According to F.P. Dinneen (1966, pp.311-12),

"In analysing the phonic material of an utterance, prosodic analysis distinguishes, as at all levels, between paradigmatic and syntagmatic relations. The items in paradigmatic relations are systemic,<sup>1</sup> while those in syntagmatic relations are structural. . . . . Typical items that can be discussed principally in terms of paradigmatic relations are the phonic segments, called phonematic units, which can be studied as elements in structure. A typical structural element is a syllable, and the syllable structure of any word or piece is considered prosodic. . . . basic to the notion of a prosody is a sound feature associated with more than a single phonematic unit or segment. Phonematic units are segmental abstractions at the phonological level and, as such, have exponents in the phonic substance. . . . Prosodies such as stress or intonation can be considered either paradigmatically (contrasting stress, intonation) or syntagmatically (since they can succeed each other and also are realized over more than a single segmental item).

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1. But the structural units, in their syntagmatic relations, are also organized as terms of systems; e.g., the tonal systems of Lhasa Tibetan: it comprises two terms, 1 and 2, and applies to the word unit. This means that a sequence of words in a Lhasa Tibetan sentence can be associated each with one or other member of that system (and Punjabi too).

An important difference between paradigmatic and syntagmatic relations is that the former are 'in absentia' but the latter 'in presentia'; only one member of a paradigmatic system can be present, the rest being implied, or potentially present; but a number of sounds, or features of a number of sounds, are all present in syntagmatic relations.



A phonematic unit, as the name suggests, both resembles and differs from a phoneme ....While phonematic units are generally represented in general phonetic terms, they should not be equated with such symbols."

Robins in 1967 presents the following description of Prosodic Analysis:

"Prosodic analysis involves two types of basic elements: phonematic units and prosodies. Each of these is set up in relation to some phonetic feature (or group of features) serving as its exponent in the actual uttered speech material. Phonematic units are consonants and vowels, and are serially ordered as segments; but any phonological structure (e.g. syllable, or syllable group) may include one or more prosodies. Prosodies are assigned to definite structures, not to places between phonematic units, and are set up to handle syntagmatic relations between certain phonetic features. Broadly, phonetic features are allotted to prosodies rather than to phonematic units, if they either extend over the whole or major part of the structure, or are positionally restricted in it and thus serve to delimit or demarcate it.... Any type of phonetic feature that can be shown to be syntagmatically involved with more than a single segment can be treated as the exponent of a prosody; .... Prosodic analysis is prepared to set up different systems of phonematic units and prosodies at different places in structures where this facilitates the analysis. Thus syllable initial consonants may well form a different system from syllable final consonants, with no identification of the members of one system with the members of another, even though certain phonetic features (exponents) may be shared between them..... prosodic phonologists see phonology as the link between grammar and the actual utterance, or, more abstractly, between grammar and phonetics; and grammatical categories and structures are properly relevant to phonological statement wherever a phonetic feature or phonetic features can be associated with them as exponents ... The outcome of prosodic analysis is not a readable transcription, but a diagrammatic representation of the interrelations of elements and features in a stretch of utterance, that can be put into connection with its grammatical structure."

(Robins 1967, pp.218-19)



"The starting-point for the prosody was essentially the complete rejection by Firth of the phoneme as a satisfactory basis for phonological analysis. There are two major characteristics of the prosodic approach. First, its elements are not confined to the narrow segments of the phoneme but might extend beyond these segments to parts of the syllable, the syllable, the word, or even the 'longer piece'. Secondly, it rejects the rigid division between morphology and phonology of American linguistics, which was, Firth said, 'to all intents and purposes phonemics with an additive morphemics plus the supplementary amendments of morphophonemics."

(Palmer, 1968, p.8)

"In prosodic analysis prominence is given to syntagmatically associated features as opposed to features in paradigmatic contrast."

(Sprigg, 1972, p547)

The chronological order of the presentation of different view points is important here; it is meant to represent some significant developments that have taken place in the field of 'prosodic analysis' over a period of well over twenty years - incidentally, coinciding with the publication of Chomsky's 'Syntactic Structures' and going through the most productive period in the T.G. movement.

1.4.2 Paradigmatic and syntagmatic relations: 'Syntagmatic' refers to the practice of associating features of successive sounds, or the whole sounds themselves, with each other, in phonological analysis, for the purpose of setting up a prosodic 'piece' of some sort, characterized by the associated features. Clearly, the various features have to be present in the utterance containing the type of 'piece' concerned (syllable-initial piece, sentence piece, etc.). 'Paradigmatic', on the other hand, refers to the practice of associating a particular sound, or a single feature of a sound, with other

sounds or features of sounds that are not to be heard in the utterance in question, but do occur contrastively, in comparable utterances, in the same place in the (syntagmatic) 'piece', as the sound, the feature, or the features with which they are compared. (The question of contrast does not arise during the process of grouping sounds and features syntagmatically, except indirectly in order to show that the sounds or features in question are really linked with each other, and are not merely an accidental succession of sounds, features.) The terms paradigmatic and syntagmatic are not, therefore, directly opposed to each other: the former deals with relations 'in absentia' and the latter with relations 'in presentia'.

Paradigmatic relations <sup>c</sup>concern members of systems; and these systems may be either phonematic or prosodic, according to the place that the system functions in. Phonematic systems function in a place defined by the type of piece.

Statements of syllable structure, though considered important in earlier accounts of prosodic analysis,<sup>1</sup> have given way in some later analyses to an emphasis on different types of syntagmatic piece, syllable piece, word piece, etc. Junction, through a junction 'piece', for example, is likely to spread over part of two syllables, a final part and an initial part, without coinciding with a syllable as whole.

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1. Firth (Synopsis of Linguistic Theory 1930-55, p.17)



1.4.3 The three main characteristics of the approach may be enumerated as follows:

- (i) its rejection of uni-dimensionality;
- (ii) its acceptance of a polysystemic approach; and
- (iii) its rejection of separation of levels of analysis.

Rejection of uni-dimensionality is immediately relevant to phonological analysis. As already stated the emphasis in prosodic analysis is not only on the paradigmatic contrasts but on the syntagmatic relations also. The study of the phonological structure of words, clauses, and sentences, in a particular language must be based on the findings of phonetics. The phonological analysis of the word can be grouped under two headings: phonematic units and prosodies. 'Phonematic units' refer to those features or aspects of the phonic material which are best regarded as "referable to minimal segments, having serial order in relation to each other in structures."<sup>1</sup> In the most general terms such units constitute the Consonant and Vowel elements or C and V units of phonological structure systematically stated ad hoc for each language. 'Prosodies' are, "by definition, of more than one segment in scope or domain of relevance, and may in fact belong to structures of any length, though in practice no prosodies have yet been stated as referring to structures longer than sentences."<sup>2</sup>

Since Robins made these remarks, there have been changes of emphasis. Now, the position may be stated like this: 'phonematic units' are phonological units that are organised into paradigmatic systems, as opposed to analysis on a syntagmatic basis; consequently, the phonetic features that phonematic units draw on for their (phonetic) exponency are those

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1. Robins (1957, p.3)

2. Ibid.

of minimal segments (or sounds). It is the case that members of 'phonematic unit' systems, C systems and V systems, may be 'in serial order' in relation to each other within an appropriate prosodic unit of some sort - a syllable initial piece, syllable (piece), word (piece), or some such type of piece; but it is also possible that there might not be a preceding, or following phonematic system within that prosodic unit for the phonematic units to be 'in serial order'. 'Serial order', then, is only a potentiality (unless one is willing to allow one-term systems).

A phonological STRUCTURE is thus a syntagmatic entity comprising phonematic units C and V, and one or more prosodies belonging to the structure as a whole. Within such structures, elements can be replaced by or substituted for other elements at the same level of abstractions; systems of units or terms commute to give values for the elements of structure.

The phonological structure must be prosodic: a prosodic piece of greater or lesser extent. If it is an extensive one - clause or sentence, say - then it will indeed comprise word prosodies, syllable prosodies, etc. as well as the appropriate phonematic units, arranged in their paradigmatic systems; but some structures, e.g. syllable-initial or syllable-final, might be too small to contain another (prosodic) structure and also of course, to occur in sequence.

1.5 Symbols used for the systematic transcription: A very brief discussion of the symbols used for the systematic transcription employed in this thesis will follow in this section. Vowels are discussed <sup>in 1.5.1</sup> - and consonants follow in 1.5.2. An attempt has been made to make use of the symbols as recommended

by the International Phonetic Association. Departures, however, are there, the sole reason being typographical convenience. For comparison, I.P.A. symbols are also being given in round brackets in this section:

#### 1.5.1 VOWELS:

i		close, front, unrounded, long.
ɪ	(ɪ)	Between close and half-close, front, unrounded and somewhat centralized, short.
e		Half-close, front, unrounded, long.
ɛ		Half-open, front, unrounded, long.
a		Open, unrounded, long.
ə		Central, unrounded, short.
ɔ		Half-open, back, rounded, long.
o		Half-close, back, rounded, long.
ʊ	(ʊ)	Between close and half-close, back, rounded and somewhat centralized, short.
u		Close, back, rounded, long.
y	}	Non-syllabic vowels: front spread and back rounded.
w		

All the vowels can be nasalized; and in the systematic transcription the symbol (̃) marks nasalization. 'ɛ' in certain circumstances is to be treated as a diphthong [əi] e.g. [k'énda]̃ ~ [kéinda] 'says'.

Vowels except ɪ, ə, ʊ following nasals in the word final position are nasalized if the stress is not ultimate in Tone-2 or Tone-3 words. In Tone-1 words there is no such nasalization noticed.



'e' in the word-final position is sometimes palatalised. Whereas i, ə, u are short in duration i, e, ɛ, a, ɔ, o, u are long. Apart from quality differences, this is an important feature to be noted.

1.5.2 CONSONANTS:

	VOICELESS				VOICED
	UNASPIRATED		ASPIRATED		
<u>Plosives</u>					
Bilabial	p		ph		b
Dental	t	(t <sub>n</sub> )	th	(t <sub>n</sub> h)	d (d <sub>n</sub> )
+Retroflex	ṭ	(ṭ)	ṭh	(ṭh)	ḍ (ḍ)
Velar	k		kh		g
27 <u>Affricates</u>					
Alveolo-palatal	c	(t <sub>q</sub> )	ch	(t <sub>q</sub> h)	j (d <sub>z</sub> )
<u>Laterals</u>					
Dental					l
+Retroflex					ɭ (ɭ)
<u>Nasals</u>					
Bilabial					m
Dental					n
+Retroflex					ṇ (ṇ)
Dental Rolled (Trill)					r
+Retroflex Flap					ɽ (ɽ)
<u>Fricatives</u>					
Denti-Alveolar	s	(s <sub>n</sub> )			
Alveolo-palatal	ʃ	(ʃ <sub>n</sub> )			
Glottal					h (ɦ)

+Retroflexion is a characteristic of articulations at four different places namely, dental and palatal at the two

extremes, and alveolar and pre-palatal in between.

In certain circumstances, the diagraphs ph, th, t̥h, kh, ch are to be treated as fricatives.

Colon (:) marks length for the preceding consonant.

Symbol (ˈ) marks a Tone-3 word in the systematic transcription.

Symbol (ˊ) marks a Tone-1 word in the systematic transcription.

Symbol (ˑ) marks stress for the following syllable (and hence Tone also) in Tone-2 polysyllabic words if the stress is not initial.

1.5.3 Phonetic Transcription: In the phonetic transcription employed in this thesis the symbols have been enclosed in square brackets, the following symbols have the usual I.P.A. values: i, e, ɛ, a, ɔ, o, u; p, ph, b, k, kh, g, l, m, n, ŋ, r, s.

The following symbols have been used only because of typographical convenience in place of the I.P.A. symbols (given in square brackets here in this section).

<u>Symbols used in this thesis</u>	<u>I.P.A. Symbols</u>	<u>Symbols used in this thesis</u>	<u>I.P.A. Symbols</u>
i	[ɪ]	ɪ	[ɪ]
u	[ʊ]	ʊ	[ʊ]
t	[t̥]	r	[ɹ]
th	[t̥h]	ʃ	[ʃ]
d	[d̥]	h	[h]
t̥	[t]	s	[s̥]
t̥h	[th]		
d̥	[d]		
c	[tʃ]		
ch	[tʃh]		
j	[dʒ]		

#### 1.5.4 PITCH Representation:

1. High falling pitch	HF \
2. Low falling pitch	LF \
3. Rising-falling pitch	RF ^
4. High rising pitch	HR /
5. Low rising pitch	LR /
6. Falling-rising	FR V
7. High level pitch	H —
8. Mid level pitch	M —
9. Low level pitch	L —

NOTE: One pitch mark per syllable has been used in this thesis. The levels marked are not absolute but only relative and the basis is auditory perception.

The quotes ( ' ' ) have been used to cover the approximate English rendering.

Systematic transcription has been employed and the symbols have already been described above.

#### 1.6. ABBREVIATIONS:

Occlusion: occ.	Plosion: plos.	Affrication: affr.
Nasality: nas.	Friction: frict.	Alveolarity: alv.
Laterality: lat.	Retroflexion: ret.	Palatality: pal.
Palato- :palato- alveolarity:alv.	Vowel: vow.	Consonant: cons.
Voiceless- ness: vcless.	Partial- voicelessness:p-vless.	
Shortness: short.	Centralization: centraliz.	
Labiality: lab.	Apicality: apic.	Dorsality: dors.
Continuant: cont.	Alveolo-palatality: alv.pal.	

## CHAPTER II

### THE VERBAL PHRASE: DELIMITATION AND GRAMMATICAL CONSTITUENTS

2.0.        INTRODUCTION: Since the Verbal Phrase can be delimited with the help of a number of criteria, they are discussed here in this chapter. An attempt has also been made to deal with the grammatical constituents of the Verbal Phrase. A Verb word has been defined as the only grammatical constituent of the Verbal Phrase with the exception of Negative and Emphatic Particles. Detailed criteria for distinguishing the Verb word are given below in section 2.5.

2.1.        THE VERBAL PHRASE: The Verbal Phrase contains a whole number of Words. The boundaries of the Verbal Phrase, therefore, coincide with the boundaries of the Word. The Phrase boundaries coincide with the Word, if it is itself coextensive with a single Word unit, otherwise, that is if the phrase comprises two or more Word units, the Phrase boundary begins with the beginning of the first Word unit and ends with the end of the last Word unit in the Phrase.

The Verbal Phrase begins with a Main Verb Word, except that in certain negative Verbal Phrases it may be the Negative particle not the Main Verb Word that is initial in the Verbal Phrase. The Main Verb Word may also be the final word in the Verbal Phrase in which case it is the only word that comprises the Verbal Phrase. This is also true of the Negative particle word [nəĩ̃]. Otherwise, it will be the Operator Verb Word or the Auxiliary Verb Word which is final in the Phrase and not





- (3) (toɾia)phɯl: der tək něĩ rěnda.  
                     NVPs                      VP  
           'A plucked flower does not stay fresh long.'
- (4) mũnda(rõnda rõnda) sõ gia si.  
                     NVPs                      VP  
           'The boy went to sleep while weeping.'

In the sentences given above (1-4), one or more examples of the Nominal or Adjectival type of Phrase precede the Verbal Phrase (which is in the clause-final position in each case). Certain of the non-verbal phrases do contain verb lexical items like ja, kər, toɾ, ro; but these are not considered in this thesis for two reasons: firstly, because they are not in the Verbal Phrase, and secondly, because the study of these verb lexical items does not add anything to the phonological analysis of the Main Verb lexical items beyond what is already covered by the Verbal Phrase; if they did contribute some phonetic and therefore, phonological features, they could be included (by a change of thesis title), so that it could cover these verb lexical items as well.

2.1.1.        PLACE OF THE VERBAL PHRASE: Generally, the Verbal Phrase is final in the clause, (or the sentence, if it is co-extensive with a single-clause sentence), but there is a type of clause in which it also occurs in a non-final place. Some examples of these non-final phrases can be found in 2.3.1.3. The post-verbal non-verbal phrases in cases like these are characterized by a low level pitch, just like the pitch of "after-thought" sentences in English. This feature is thus confined to the non-verbal phrases that are exemplified in the clause-final positions; it can therefore, be used as a criterion to distinguish the non-verbal clause-final phrases from the Verbal Phrases that are exemplified in the final position in the clause.

2.2            CLAUSE: A clause in Punjabi may comprise one or more phrases. According as the clause contains a Verbal Phrase or a non-verbal phrase, it may be classified as a Verbal-phrase or a Non-verbal phrase clause. As compared with the Sentence, the clause may or may not be co-extensive. When it is, the sentence is a one-clause sentence; otherwise, the sentence comprises more than one clause. In this thesis the unit characterized by intonation is taken to be the clause, not the sentence. Thus a sentence comprising more than one clause may be characterized by as many intonation patterns as there are clauses in number.

2.2.1.        ONE-CLAUSE SENTENCES:

ó aya si.	'He had come.'
tar kər nũ gia.	'Tar went home.'
mẽ pĩṇḍ nũ jaũga.	'I will go to the village.'

2.2.2.        MULTI-CLAUSE SENTENCES:

ó kitab pərḍi si, te rōṇḍi si.	
'She was reading a book and sobbing.'	
mẽ óṇũ ethe bulaya si, pər ó kite hor cəlia gia.	

'I had called him here; but he went somewhere else.'

It may be noted here that in a two-clause sentence, the two clauses belong to two different terms of the Intonation system stated for the Non-final and Final clauses respectively (see chapter III).

2.3.            SENTENCE: A sentence in Punjabi may or may not be co-extensive with an utterance. It may contain one or more verbal-phrase(s) with or without one or more non-verbal phrase(s).



A one-clause sentence is characterized by utterance-final features like the potentiality of pause and pitch-features peculiar to that type of clause (the pitch-features are discussed in chapter III, sections 3.1 and 3.2).

A verbal-phrase sentence may comprise one or more verbal phrase(s) with or without other phrase(s̃). Generally, the non-verbal phrases precede the verbal phrase in a clause (and a sentence if it is co-extensive with the clause). In certain sentences, however, the non-verbal type of phrase may follow a verbal phrase (2.3.1.3).

### 2.3.1. VERBAL-PHRASE SENTENCES:

#### 2.3.1.1. VERBAL-PHRASES only:

já.	'Go.'
já, jáke s̃.	'Go, and sleep (after having gone).'
uṭ:hke já.	'Having got up, go.'

#### 2.3.1.2 NON-VERBAL + VERBAL:

<u>(tũ) bár nũ</u> <u>já.</u> NVPs VP	'(You) go outside.'
<u>ó pĩṇḍ nũ</u> <u>gia si.</u> NVPs VP	'He had gone to the village.'
<u>món kərõ</u> <u>aya.</u> NVPs VP	'Mohan came from home.'
<u>tar óthe</u> <u>jauga.</u> NVPs VP	'Tar will go there.'

#### 2.3.1.3 VERBAL + NON-VERBAL:

<u>aya nēĩ</u> <u>ó mũṇḍa.</u> VP NVP	'That boy has not come?'
<u>ai si</u> <u>meri pēṇ.</u> VP NVP	'My sister had come.'

2.3.2 NON-VERBAL-PHRASE SENTENCES: In Punjabi, sentences of a non-verbal phrase type are not very common. They may, consequently, be treated as exceptions to the more frequent pattern, i.e., the verbal-phrase sentences as exemplified above. Sentences of the non-verbal phrase type are the following:

- (i) an answer to a question, (2.3.2.1), or
- (ii) a response to a call (2.3.2.2),
- (iii) a call (2.3.2.3), or
- (iv) an exclamation (2.3.2.4).

2.3.2.1 An answer to a question

- (kəṇ aya si?) móṇ. '(Who had come?) Mohan.'
- (ó báṛō aya si?) hā. '(Had he come from abroad?) Yes.'
- (ó kədō aya si?) kél šam nū. '(When did he come?) Last evening.'

2.3.2.2 A response to a call

- (ətul!) hā ji. '(Atul!) Yes, sir.'
- (mōṇ, həri, riṭa, bæco) əc:haji. '(Mohan, Hari, Rita, save yourselves) All right.'

2.3.2.3 A call

- ó mūṇḍio! 'Hey, you boys!'
- ətul! 'Atul!'
- alok! 'Alok!'

2.3.2.4 An exclamation

- kin:a sóṇa nəjara! 'What a wonderful view!'
- kin:a bēḍia joṛa! 'What a nice couple!'
- bót i pēṛa! 'Very bad indeed!'
- əc:ha! 'Is that so!'

2.4                    DELIMITING THE WORD: JUNCTION    It is not the purpose of this thesis to attempt detailed investigation of the phonological and grammatical criteria upon which the establishment of the Word as an entity in general can be based; our interest is limited to those features that help us in delimiting the verbal phrase and the words contained in it. Boundaries of words contained in other types of phrase do not concern us here in this thesis.

It is important to know the boundaries of the verbal phrase, so that the precise limits within which this thesis is to be confined can be drawn. Since the verbal phrase contains a whole number of words, the boundaries of the phrase will necessarily coincide with the boundaries of Words (though the reverse is true for the one-Word phrase only). At the phonological level, thus it is important to define Word boundaries, at least to some measure.

There are some very obvious phonetic features in the spoken form of the language that characterize the junction of syllables. It is these features that are stated here as criteria of two terms of a Junction System: Interverbal, Intraverbal.

"Interverbal is so named as marking the boundaries between Words, and therefore also such supraverbal units as Phrase, Clause, and Sentence wherever the boundaries of these units coincide with those of the Word, i.e. initially and finally in these units; Intraverbal Junction is so named, on the other hand,



as marking the absence of Word boundaries, and therefore the absence of Phrase, Clause, and Sentence boundaries also." (Sprigg, p.43, 1968)

In the phonetic transcription employed in this thesis, the Interverbal Junction is indicated by a space between the successive syllables and the Intraverbal Junction is indicated by the absence of space between the successive syllables.

The criteria that serve to establish the two phonological categories, Inter- and Intra-verbal Junction, are considered as under: Interverbal Junction (2.4.1), Intraverbal Junction (2.4.2).

2.4.1        Interverbal Junction: All those phonetic features and sequences of phonetic features that serve to establish Word boundaries, can be used as criteria of Interverbal Junction. As far as this type of junction is concerned, the Word is considered whether it is at the beginning and the end of phrases or within the phrase. Where the Word boundaries are co-extensive with the beginning or the end of a verbal phrase, our interest may be confined to one syllable - the initial syllable or the final syllable, or it may extend to both syllables of the junction. The same is true of the cases where the Word occurs within the phrase. The criteria of Interverbal Junction will enable us to decide as to which Word a particular syllable belongs to.

The criteria may be stated under the following three headings:

Word-initial features (2.4.1.1): These criteria are drawn from

the syllable-initial features of the initial syllable of the Word, and thus mark the beginning of the Word. These criteria are not related to another syllable of the preceding Word, should there be any in the verbal phrase. Thus they are valid in their own right without any reference to another syllable.

Word-final features (2.4.1.2): These criteria too are drawn from a single syllable of the Junction, in this case Word-final, and therefore a mark of Word-ending. These are valid independently of features that are associated with any of the initial syllable of a following Word, if any. No reference to such a syllable is required.

Criteria based on phonetic features drawn from both the syllables of the Junction (2.4.1.3): In the case of criteria of this type, phonetic features of either syllable are not enough; features of the one syllable provide a criterion if jointly considered with features drawn from another syllable.

2.4.1.1 Criteria from Word-initial features: These criteria are drawn from the syllable-initial features of the initial syllable of the Word. They are appropriate to the beginning of an utterance (and hence the phrase if it is co-extensive with the utterance) as well as junction between Words. The Word-initial features that serve as criteria may be preceded by silence or by an utterance of another speaker.

The following phonetic features serve as criteria to mark the Word-beginning. It should, however, be noted here that though the presence of such features marks the beginning of a Word, the presence of other features does not necessarily indicate the absence of Word-beginning. Certain other features

are also there that occur at the beginning of a Word, but since they are not confined to this position, they cannot be used as criteria.

1. Glottality and friction [h] e.g.

[həʔ (pəre).] 'Move away.'

2. Vocalic short Non-front [ə, u]<sup>1</sup> e.g.

[(óne mǔ) əd:ia si] 'He had opened his mouth.'

[(mẽ bele sir) up:ərda si]

'I used to reach (there) in time.'

3. Vocalic Half-open front length nas. [ẽ] e.g.

[(kyõ)ẽthda si (ó)?] 'Why was he showing off?'

2.4.1.2 Criteria from Word-final features: The following phonetic features serve as criteria of Word-ending. It is worth mentioning here that though their presence is a marker of word-finality, the presence of other features does not necessarily mean the absence of Word-ending: there are other features also that may be present at the end of the Word, but since they are not confined to this position, they cannot be used as criteria.

These criteria are drawn from the final syllable of the Word and are, therefore, appropriate to the ending of an utterance (and hence the phrase if it is co-extensive with the utterance) as well as a junction between words. The features may also be followed by silence or an utterance of another speaker.

---

1. [i] occurs only medially.



The following sequences of phonetic features are markers of word ending:

DESCRIPTION OF FEATURES		PHONETIC SYMBOLS	
consonant	vowel	consonant	vowel
1. length	open/half-close/close nas/non-nas + length	p:,t:,ṭ:,k:,c:,b:,d:,ḍ: g:,j:,l:,m:,n:	a, e, o, i, u ã, ã, õ, ã, ã
2. Ret.+ nas.	open/half-close/close + nas. + length	ŋ	ã, ã, õ, ã, ã

Examples:

1. [sʊt:a, tʊt:a, mʌk:a, nɛc:i; dʌb:a, bɛd:a, lɛg:a, bɛj:a]  
 [tɛp:e, tɛp:o, tɛp:i, tɛp:u; tɛp:ã, tɛp:ẽ, tɛp:õ, tɛp:ĩ, tɛp:ũ]  
 [lɛb:a, lɛb:e, lɛb:o, lɛb:i, lɛb:u; lɛb:ã, lɛb:ẽ, lɛb:õ, lɛb:ĩ, lɛb:ũ]  
 [hɪl:e, hɪl:o, hɪl:i, hɪl:u; hɪl:ã, hɪl:ẽ, hɪl:õ, hɪl:ĩ, hɪl:ũ]  
 [kʊm:e, kʊm:o, kʊm:i, kʊm:u; kʊm:ã, kʊm:ẽ, kʊm:õ, kʊm:ĩ, kʊm:ũ]  
 [mɛn:ã, mɛn:ẽ, mɛn:õ, mɛn:ĩ, mɛn:ũ; mɛn:e, mɛn:o, mɛn:i, mɛn:u]
2. [hoŋã, hoŋẽ, hoŋõ, hoŋĩ, jaŋũ]

Other phonetic features that mark the word-ending are:			
(i) ret.+ lat.	[l]	e.g.	[mɪl, rɔl, gal, dɛl]
(ii) ret.+ flap	[ɾ]	e.g.	[lɛɾ, moɾ, saɾ, muɾ, tʊɾ]
(iii) ret.+ nas.	[ŋ]	e.g.	[jãŋ, bũŋ, mĩŋ, bẽŋ]

Pause: A pause can also be stated as one of the criteria for word-ending. A pause in the course of utterance or between utterances coincides with word-ending and can, therefore, be treated as a word-final mark, e.g.

- [ó ãnda, tã -----] 'Had he come -----'  
 [je ó ae, tã ----] 'If he comes -----'  
 [ó aya , ke -----] 'Has he come or ----'

2.4.1.3 Criteria comprising features drawn from both the syllables of the Junction: There is a syntagmatic relationship between vowels of various syllables of a word. Certain vowels in a word preclude the possibility of there being other vowels in that word. When, therefore, vowels of two syllables in the junction are not compatible with each other in this way, the sequence of vowels can serve as a criterion of Inter-verbal Junction.

The following sequences of vowels occur only at word boundaries:

<u>First syllable</u>	<u>Second syllable</u>
(a) Half-open + length [ɛ, ɔ] Centralisation + short [ɪ, ʊ]	close + back + length [u]
(b) Close + length [i, u]	{ Half-open + length [ɛ, ɔ] Centralisation + short [ɪ, ʊ, ʊ]
(c) Half-close + length [e, o]	{ Half-open + length [ɛ, ɔ] Centralisation + short [ə, ʊ]
(d) Open + length [a]	{ Half-open + length [ɛ, ɔ] Centralisation + short [ə, ʊ]
(e) Centralisation + short [ɪ, ə, ʊ]	{ Centralisation + short [ɪ, ə, ʊ] Half-open + length [ɛ, ɔ]
(f) Partial voicelessness	Partial voicelessness

2.4.2 INTRAVERBAL JUNCTION: The criterion taken from Intraverbal Junction comprises phonetic features that help to establish a sequence of features as being in an Intraverbal-Junction relationship with each other, and therefore belonging to the same word.

Criterion of nasality + velarity/palatality: The only criterion of Intraverbal Junction is provided by the presence of phonetic features nasality + velarity/palatality [ŋ/p]. This can, therefore, be used as a marker of Intraverbal Junction; linking the syllable containing it to the following syllable, e.g.

[ ó roṭi mǎŋda si] 'He was asking for food.'

[ taro rũ pĩṇḍi si] 'Taro was carding cotton.'

2.5 VERB WORD: Grammatical Criteria: A Verb stem (with the exception of Auxiliary) may be inflected in one of the following ways or it may be un-inflected (in which case the verb can also occur uninflected). Any Word must be identified as a Verb Word if it contains any one of the following set of twenty-two inflexions (verb inflexion) (and the stem with which it combines is, consequently, to be identified as a verb stem). As in (23), the verb may also occur as uninflected. The set of inflexions and its examples are:

1. - i      ó menũ mĩḷi si.      'She met me.'
2. - e      sáre mũṇḍe nēc:e si.      'All the boys danced.'
3. - o      tusĩ jaṇ.      'You should go.'
4. - ẽ      kəm: kərẽ tā pəta ləg:e.      'If you work you will realize.'
5. - ă      mē šuru kəră?      'May I begin?'
6. - ie      əsĩ gaie, je tusĩ suṇõ.      'We'll sing if you listen.'
7. - iă      kuṛiă aiă si.      'The girls had come.'
8. - əṇ      je ó mej cuk:əṇ,      'If they lift the table,'
9. - õ      je dəs:õ tā pəta ləg:e.      'If you tell, then we'll know,'
10. - di      taro turdi si.      'Taro was walking.'
11. - de      bēc:e pərde a.      'The children are reading.'



- |           |                        |                                      |
|-----------|------------------------|--------------------------------------|
| 12. - da  | ó bəkda si.            | 'He was talking nonsense.'           |
| 13. - diã | ó pərđiã i sōgia.      | 'He went to sleep having just read.' |
| 14. - nĩ  | mẽ bárnũ jãnĩã.        | 'I am going out.' (female)           |
| 15. - nã  | tũ kyō rōnã ã?         | 'Why are you crying?'                |
| 16. - nẽ  | hụn əsĩ sōnẽ ã.        | 'Now, we go to sleep.'               |
| 17. - ɲĩ  | óne roṭi khaɲĩ a.      | 'He has to eat his meals.'           |
| 18. - ɲẽ  | ó jaɲẽ, menũ ki?       | 'He should know, I do not bother.'   |
| 19. - ɲã  | mẽ tã os rá nẽĩ jãɲã.  | 'I won't go that way.'               |
| 20. - ɲĩã | ódiã adətã nẽĩ jãɲĩã.  | 'He won't leave his habits.'         |
| 21. - u   | óape jau.              | 'He will go on his own.'             |
| 22. - ũ   | mẽ rat nũ mɔrũ.        | 'I'll come back at night.'           |
| 23. -     | uninflected kər nũ já. | 'Go home.'                           |

2.6 VERB WORD: CLASSIFICATION: A Verb Word may be sub-classified as (2.6.1) Main Verb, (2.6.2) Operator Verb, or an (2.6.3) Auxiliary Verb. The criteria that form the basis of this classification are as under:

(a) Main Verb versus Operator/Auxiliary

- (i) A Main Verb can be the sole constituent of the Verbal Phrase.
- (ii) In an affirmative Verbal Phrase, the Operator and the Auxiliary, where exemplified (either one, or both) follow the Main Verb. In a negative Verbal Phrase, however, the Auxiliary may precede the Main Verb; and the Negative Particle must precede it too.

(b) Operator Verb versus Main/Auxiliary

- (i) The Operator Verb may be exemplified more than once in a Verbal Phrase (not more than three times).

(ii) The position of the Operator is: following the Main Verb, and preceding the Auxiliary, if this too is exemplified. In a negative Verbal Phrase, the Auxiliary may precede the Operator.

(c) Auxiliary versus Main/Operator

(i) Where it is exemplified, the Auxiliary follows a Main Verb, or an Operator Verb, or both in an affirmative Verbal Phrase.

(ii) In a negative Verbal Phrase the Auxiliary may precede the Main Verb and follows the Negative Particle.

(d) Main/Operator versus Auxiliary

(i) A Main/Operator Verb may or may not be inflected in one or more of the twenty two different ways referred to above (2.5).

2.6.1 Main Verb: It belongs to an open set of items in Doabi. The following are examples:

- |        |                                   |                            |
|--------|-----------------------------------|----------------------------|
| (a. i) | (kər nũ) <u>já.</u>               | 'Go home.'                 |
|        | M                                 |                            |
| (a.ii) | (ó kər nũ) <u>jānda</u> si.       | 'He was going home.'       |
|        | M            A                    |                            |
| (a.ii) | (ó kɪtabā) <u>pərda</u> hũnda si. | 'He used to read books.'   |
|        | M            O            A       |                            |
| (a.ii) | (taro šérõ) <u>dər</u> gəi.       | 'Taro fled from the city.' |
|        | M            O                    |                            |
| (a.ii) | (ó) <u>něĩ</u> si mən:i.          | 'She did not agree.'       |
|        | Neg. A            M               |                            |
| (a.ii) | (ó) <u>něĩ</u> mən:əda.           | 'He does not agree.'       |
|        | Neg.            M                 |                            |

2.6.2 Operator Verb: An Operator Verb belongs to a closed set of twenty eight items in Doabi<sup>1</sup> (Appendix II). It may

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1. cf. Literary style of Punjabi as reported by Puar (1974, 135) has 34 Operator Verbs. In Hindko the number is only eight (Awan 1974, Appendix).

be in the final position in the Verbal Phrase (hence in a verbal-phrase clause if co-extensive with the Verbal Phrase).

Examples:

(b. i) (tar) kũmda ría.  
M O

'Tar kept roaming about.'

(b. i) (ónã de gələt kəm: bi) kər dīt:e jãnde rée.  
M O O O

'Their wrong desires were also catered for.'

(b. i) (roṭi) kha læi gəi.  
M O O

'The food was eaten.'

(b. ii) (gəḍ:i) cəldi rəi si.  
M O A

'The train went on moving.'

(b. ii) (hım:ət kərẽ tã gəḍ:i) phəṛ læi ja səkdi a.  
M O O O A

'If you try, the train can be caught.'

(b. ii) (ó kər) ja i nəĩ si səkda.  
M Em. Neg. A O

'He could not go home at all.'

(b. ii) (ónũ bæcpən bic bukhār) nəĩ si cərda hũnda.  
Neg. A M O

'In his childhood, he did not get fever.'

2.6.3 The Auxiliary Verb: A form of Auxiliary serves as one of the exponents of the (Present and Past) terms of Tense System in Doabi. It is exemplified only once, if at all, in a Verbal Phrase. There is only a limited class of lexical items to which an Auxiliary belongs.

Unlike Hindko, a form of Auxiliary in Doabi is an exponent of Present and Past terms only of the Tense System. In Hindko



it serves as an exponent of Future also, but in Doabi, certain particles are used for this purpose. The Future Tense Particles do not follow the Verb Stem immediately, although the inflexions do. Some examples of the Verbal-Phrase clauses in which the Auxiliary is exemplified are:

- (c. i) (ó kèr) gia si. 'He had gone home.'  
                                   M    A
- (c. i) (ó) pérda hūnda si. 'He used to study.'  
                                   M       O    A
- (c.ii) (ó hale) nēĩ si ai. 'She had not come yet.'  
                                   Neg. A   M

In the example:

- (mē əj: bār nū) jaūga. 'I shall go out today.'  
   M

the Main Verb 'ja' is inflected for Future Tense category but the Future Tense Particle -ga is not added to the stem, it follows another element, -ū-, in this particular case.<sup>1</sup>

## 2.7 THE GRAMMATICAL CONSTITUENTS OF THE VERBAL PHRASE:

IN RELATION TO THE NUMBER OF WORDS IN A VERBAL PHRASE: In the dialect under study, a Verbal Phrase may consist of one or more verb words. The presence of four such words is a common pattern, although five are also likely. In Hindko, however, a verbal phrase does not contain more than three words. (Awan 1974, p.8-9). In the literary style of Punjabi, there may be up to seven words in such a phrase (Puar 1974, p.89). The Verbal Phrase may, therefore, be classified as one-word phrase, two-word phrase, three-word phrase, four-word phrase

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1. cf. Hindko where an Auxiliary [si] is used, e.g.  
       [o cəla kər si] 'He/she will be walking.'  
                           M    O    A

and five-word phrase according to the number of words it contains. It can also be classified as Affirmative (2.7.1) or Negative (2.7.2) according to whether it contains a Negative Particle or not.

### 2.7.1 AFFIRMATIVE VERBAL PHRASES:

2.7.1.1 One-Word Phrase: A one-word affirmative verbal phrase contains a Main Verb only. E.g.

já.	'Go.'
(othe) <sup>1</sup> já.	'Go there.'
(tũ) cəl.	'You move.'
(mẽ) aũga.	'I shall come.'
(ó kər) si.	'He was at home.'

2.7.1.2 Two-word Phrase (M + O, or M + A): A two-word verbal phrase may contain either:

(i) a Main Verb and an Operator Verb, or

(ii) a Main Verb and an Auxiliary Verb, e.g.

(i) (tũ) cəla já.	'You go away.'
(éthe) a ja.	'Come here.'
(pà) tərda ría.	'Brother kept swimming.'
(ó) kũmda ría.	'He kept roaming about.'
(ii) (ó) aya si.	'He had come.'
(mẽ kər) gia si.	'I had gone home.'
(ó paŋi) pərđi a.	'She is drawing water.'
(óne kɪtab) pərđi si.	'He had read the book.'

---

1. The less significant portion is enclosed in brackets.

2.7.1.3 Three-word Phrase (M + O + A, or M + O + O): A three-word Verbal Phrase may consist of either,

(i) a Main Verb, an Operator Verb, and an Auxiliary Verb, or

(ii) a Main Verb and two Operator Verbs, e.g.,

- (i) (ó paṇi) pər̥di rëndi a. 'She keeps on drawing water.'  
                                   M          O      A  
 (mẽ roṭi) kha ləi si. 'I had eaten bread.'  
                                   M          O      A  
 (ii) (ó éthe) a jaya kəre. 'He should come here.'  
                                   M          O      O  
 (món é kītab) pəṛ līa kəre. 'Mohan may read this book.'  
                                   M          O      O

2.7.1.4 Four-word Phrase (M + O + O + A, or M + O + O + O):

A four-word Verbal Phrase comprises either,

(i) a Main Verb, two Operator Verbs and an Auxiliary Verb, or

(ii) a Main Verb and three Operator Verbs, e.g.

- (i) (ciṭ:hi) pəṛi ja səkdi si.

                  M      O      O      A

'The letter could be read.'

(kuṛi) tor dīt:i jāndi si.

                  M      O      O      A

'The girl was sent.'

(mũṇḍe nũ) dəs:ia ja cuk:a si.

                  M      O      O      A

'The boy had been told.'

(mẽnũ bi) dəs:ia ja səkda si.

                  M      O      O      A

'I could also be told.'

(murda bəc:a) dəb dīt:a jānda a.

                  M      O      O      A

'The dead child is buried.'



( óthe é gəl:) kiti ja rái si.

M O O A

'This was being discussed there.'

(ii) (ónã de gələṭ kəm: bi) kər dīt:e jande rée.

M O O O

'Their illegal desires were also catered for.'

(jəd ó kénd) bəṇai ja rái hūndi....

M O O O

'When that wall was being built.....'

2.7.1.5 Five-word Phrase (M+O+O+O+A): A five-word Verbal Phrase, though not a favourite pattern, is also likely. It comprises a Main Verb, three Operator Verbs, and an Auxiliary Verb, e.g.

(roṭi) kha lai ja səkdi si.

M O O O A

'Bread could be eaten.'

(kɪtab bele sɪr) pər lai ja səkdi si.

M O O O A

'The book could be read in time.'

(hɪm:ət kərẽ tã gəd:i) phər lai ja səkdi a.

M O O O A

'If you try, the train can be caught.'

(óde pɛse ónũ) de dīt:e ja səkde a.

M O O O A

'His money can be paid to him.'

2.7.2 NEGATIVE VERBAL PHRASES

2.7.2.1 One-word Phrase: A one-word negative Verbal Phrase may comprise a Negative Particle (Neg.) only. E.g.

(ó aya si ke) nǎĩ? 'Did he come or not?'  
Neg.

(tíkəṭ di koi loṛ) nǎĩ. 'Ticket is not needed.'  
Neg.

2.7.2.2 Two-word Phrase: A two-word negative Verbal Phrase contains a Negative Particle and a Main Verb. E.g.

(i) (ó) nǎĩ mən:əda. 'He does not agree.'  
Neg. M

(ii) (nina əj:) ai nǎĩ. 'Nina has not come today.'  
.M Neg.

2.7.2.3 Three-word Phrase: A three-word negative Verbal Phrase comprises a Main Verb, Negative Particle, and an Operator, or Negative Particle, Auxiliary Verb, and a Main Verb (M+Neg.+O), or (Neg.+A+M). E.g.

(i) (tar) kʷmda nǎĩ ría. 'Tar did not keep roaming.'  
M Neg. O

(ii) (gəḍ:i hale) nǎĩ si ai. 'The train had not come yet.'  
Neg. A M

2.7.2.4 Four-Word Phrase: A four-word negative Verbal Phrase contains either (i) Negative Particle, Auxiliary Verb, Main Verb and an Operator, or (ii) Negative Particle, Main Verb, and two Operator Verbs (Neg+A+M+O, or Neg.+M+O+O), e.g.

(i) (ó kəm:) nǎĩ si kər səkda. 'He could not go to work.'  
Neg. A M O

(ii) (je ónã de kəm/əsĩ) na kər səkde hũnde...  
Neg. M O O

'If we were not able to do their jobs....'

2.7.2.5 Five-Word Phrase: A negative Verbal Phrase

that comprises five words may either, contain (i) a Negative Particle, a Main Verb, and three Operator Verbs, or (ii) a Main Verb, a Negative Particle, an Auxiliary Verb and two Operator Verbs (Neg.+M+O+O+O, or M+Neg.+A+O+O), e.g.,

(i) (óthe gəl:) na kiti ja réi hūndi....

Neg. M O O O

'If this had not been being discussed there....'

(je ó kénd) na bænai ja réi hūndi...

Neg. M O O O

'Had that wall not been being built....'

(ii) (murda bæc:a) dəb: nēĩ si dīt:a jānda.

M Neg. A O O

'The dead child was not buried.'

2.7.2.6 Six-Word Phrase: A six-word phrase pattern is

confined to the negative and emphatic Verbal Phrase. The affirmative Verbal Phrase can contain only upto five words, A negative six-word phrase has either, a Main Verb, a Negative Particle (Neg.), three Operator Verbs and an Auxiliary, or a Main Verb, a Negative particle, an Auxiliary and three Operator Verbs (M+Neg.+O+O+O+A) or (M+Neg.+A+O+O+O). The order of categories in an emphatic six-word Verbal Phrase is: a Main Verb, an Emphatic particle (Em.), three Operator Verbs and an Auxiliary Verb.

Examples:

(ki óde pəse ónũ pélã i) de nēĩ dīt:e ja səkde si?

M Neg. O O O A

'Could not his money be paid to him earlier?'



(mere ɔŋ tō pélã sáre kəm:) muka nǝĩ si dít:e ja səkde?

M Neg. A O O O

'Could all the tasks not be completed before my arrival?'

(je ó dɔɾde tã gəɖ:i) phəɾ i ləi ja səkdi si.

M Em. O O O A

'Had they run, the train could definitely be caught.'

In case a six-word phrase contains a Negative particle, and also an Emphatic particle, the order of categories is: a Main Verb, an Emphatic particle, a Negative particle, an Auxiliary Verb and two Operator Verbs (M+Em.+Neg.+A+O+O), e.g.

(é kəm:) kita i nǝĩ si ja səkda.

M Em. Neg. A O O

'This work could not be done at all.'

Seven-word Phrase: Like the six-word phrase, a seven-word Verbal Phrase can only be a negative Verbal Phrase. This pattern is hardly, if ever, used in the colloquial style; but its possibility cannot be ruled out altogether. Such a phrase comprises a Main Verb, an Emphatic particle, a Negative particle, an Auxiliary Verb and three Operator Verbs (M+Em.+Neg.+A+O+O+O), e.g.

(esi halet bic sunehe) de i nǝĩ si dít:e ja səkde.

M Em. Neg. A O O O

'Under such a condition the messages could simply not be delivered.'

## CHAPTER III

### INTONATION

3.0            INTRODUCTION: In this thesis, my interest is limited to the part played by intonation in relation to the Verbal Phrase. Since the Verbal Phrase is final in the clause (for exceptions see chapter II), the intonational features that are characteristic of the end of the clause are also characteristic of the Verbal Phrase, sometimes only of the end of the Verbal Phrase. A more detailed account of clause and sentence intonation in relation to clause and sentence as a whole has already been given elsewhere (Joshi, 1973, pp.11-22).

Although the sentence is generally taken to be the largest grammatical unit for linguistic analysis, (and also a phonological unit for a similar purpose) the clause as a unit has been treated here as the largest unit for the study of the different intonation patterns found in Punjabi. It is assumed that "sentence intonation is adequately specified by the intonations of the constituent clauses ..... an intonation as pattern may be said to have clausal domain" (Hultzén, 1964, p.85-6).

The intonation system of Punjabi clauses is studied here in this thesis with the help of the following two main categories: Final (3.1) and Non-final (3.2). The latter type

shows continuation by the same speaker, or at least his intention to continue. It heralds another clause, within the sentence. In the case of the Final-clauses, the duration of pause is, if there, more than that of the Non-final clause(s). Clauses cannot, however, be specified by pauses alone. It is the pitch-features that help us in deciding as to the finality or non-finality of a given clause. Along with other features, pitch-features have also been stated for each term of the three-term tonal system in chapter IV (4.1). They have been studied under different terms of the Intonation System set up in this chapter.

One might imagine the pitch of each word in a tonal language like Punjabi to be fixed beforehand, and that therefore, it would be difficult for it to have any intonation; but the case is not so simple as that, because pitch phenomena are found which can only be regarded as intonation. Emotionally, a given clause may be spoken in more than one way to present and express different attitudes, each of the different terms of the tonal system accordingly having more than one pitch-feature exponent. In addition, grammatically, the clause gets a final or non-final pitch pattern, within the sentence.

For the Final clause (3.1) a three-term sub-system can be stated. The three terms are named F (after a fall in pitch), H.R. (after a high rise in pitch), and H.Le. (after a high level pitch, that being characteristic of this type). In the examples that follow we have:



- (1) F, symbolized by: . (3.1.1)
- (2) H.R., symbolized by: ? (3.1.2)
- (3) H.Le., symbolized by : ! (3.1.3).

For the Non-final clause (3.2) a two-term sub-system can be set up. The two terms of the prosodic sub-system are named M.Le. (after mid-level pitch) and L.R. ( a low rise in pitch being characteristic of such clauses). In the examples given below, we have:

- (1) M.Le., symbolized by: , (3.2.1)
- (2) L.R., symbolized by : ; (3.2.2).

The phonetic exponents of each type are being discussed as under:

### 3.1 FINAL (Sentence - final clause)

3.1.1 F-type: Phonetic Criterion: A fall in pitch from mid to low in the clause-final word . (Additional criteria are provided by the pitch-patterns of the verb words that precede the clause-final word as in (1) and (2): mid level-mid level for Tone-2 and mid fall-low level for Tone-1).

A fall, or rise-fall in the pitch, which may remain low level at the end of a clause-final word, is a marker of the finality of the Clause in the sentence (or utterance if it is co-extensive with it). In addition this fall helps in keeping the F-type of Intonation quite distinct from the rest of the terms of the two sub-systems set up above.

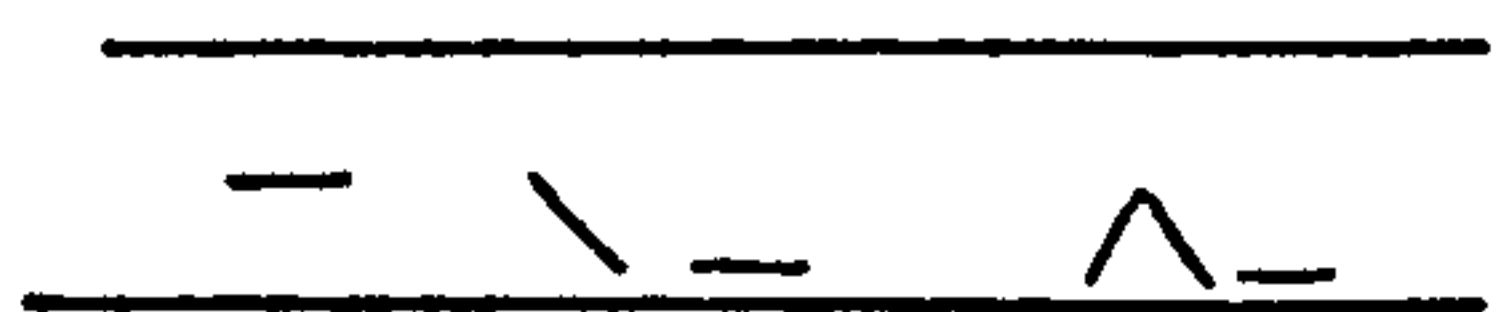
Examples of this type are:

- (1) pà      tərda      ría.                      'Brother kept swimming.'



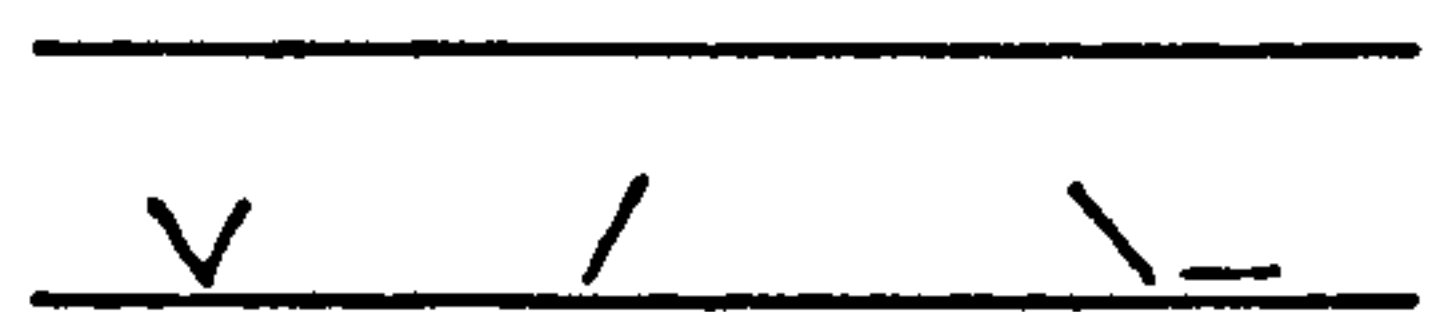
(2) tar kùmda ría.

'Tar kept roaming about.'



(3) pà šér gia.

'Brother went to the city.'



(4) ó kèr gia.

'He went home.'



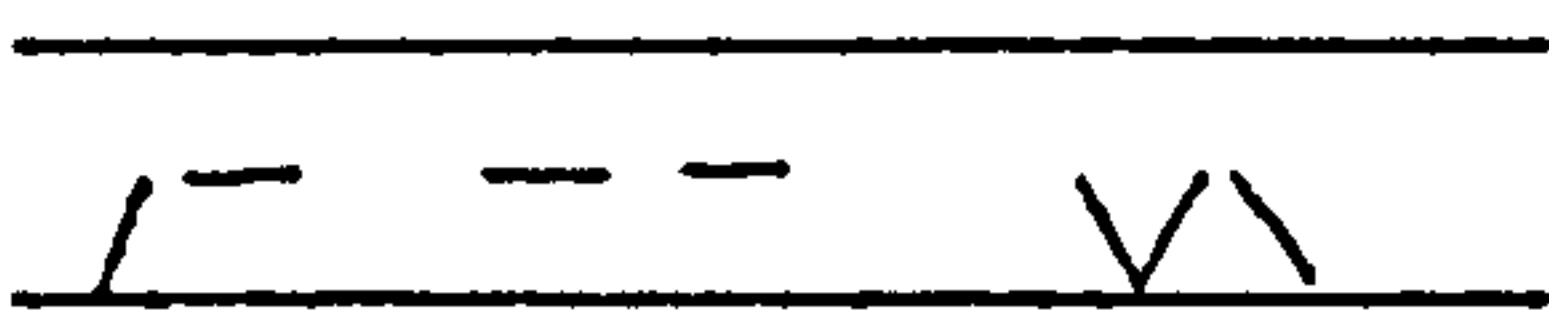
(5) taro šérō pèj:i.

'Taro fled from the city.'



(6) óne laṭhi pèn:i.

'He broke the stick.'

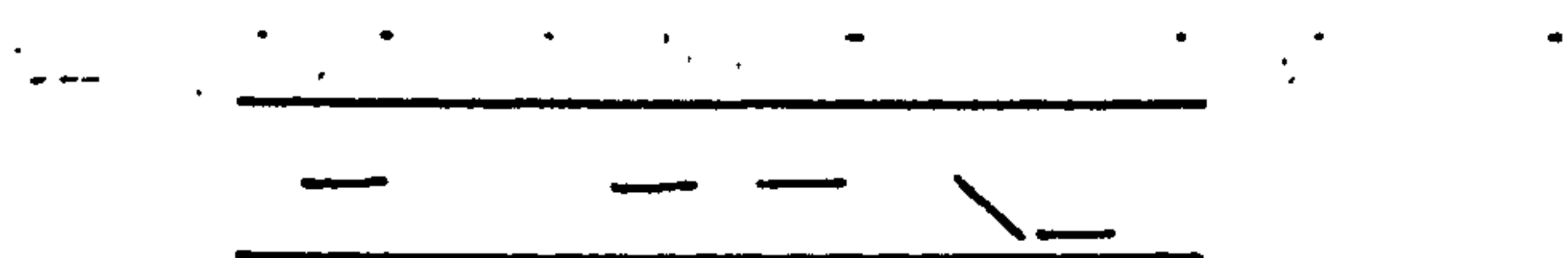


It is clear that there is a fall in pitch in all six examples in 3.1.1 - in the final word (and that this fall, provided that it is clause-final or followed by a low level, is an F critèrion). There is a Tone-3 word ría in the clause-final position in examples (1) and (2). In this word an initial low rise-fall in pitch is followed by a low level in the final syllable; this pattern is, however, preceded by level-level pitch in example (1) and mid fall, low level in example (2). In examples (3) and (4), the Tone-2 word gia is exemplified in the clause-final position. The pitch of the first syllable falls from mid to low and remains low

level in the last syllable of the word. The Tone-1 words pèj:i in example (5) and pèn:i in example (6) mark the end of the sentence-final clause. In both these examples, the pitch of the last syllable falls from mid to low after an initial fall-rise in the preceding syllable.

The F-type clauses include simple statements with or without any particular emphasis, as also questions demanding answers other than a simple yes or no. It is important to note here that these questions must contain an "interrogative word". The presence of such a word in this particular type of clause helps to keep this type distinguished from other questions which require yes or no as answer. In the following clause (which is coextensive with a sentence that in turn coincides with an utterance) composed of Tone-2 words in the Tone order 2-2-2, kədō is the "interrogative word":

ram          kədō          gia.          'When did Ram go?'



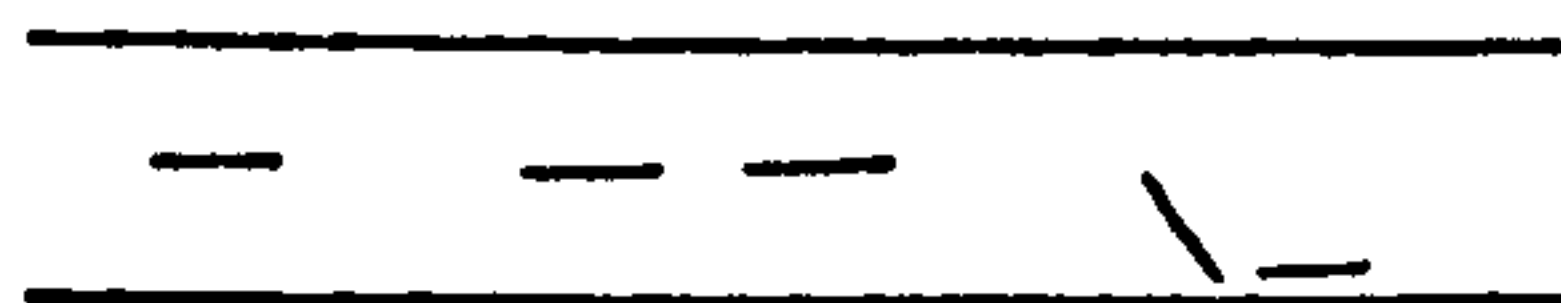
the pitch of the clause-final word gia falls from mid to low in the first syllable and remains low level in the last syllable. The most likely answers to this particular type of question - INFORMATION QUESTION - should make a mention of time, and in no case would a simple yes or no suffice. Similarly, the most likely answers to questions like the following clause comprising words in the Tone order 2-2-2 and containing the "interrogative word" kit:hō, must be



specifying a particular place or the direction:

tũ      kit:hõ      ayã.

'Where have you come from?'



In this example as well, the pitch of the first syllable of the clause-final word falls from mid to low and that of the last syllable remains low level.

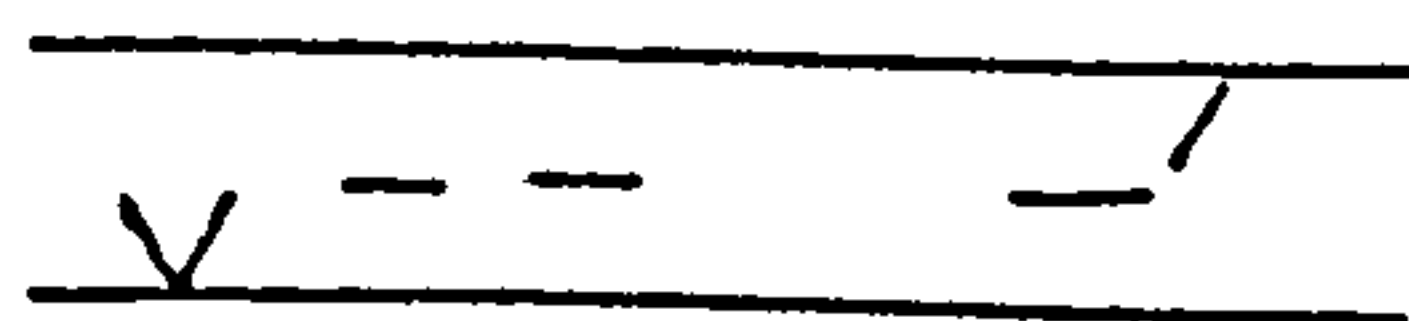
Halliday and Hasan (1976, p.210) have termed questions like the above in English "WH- or NON-POLAR". Sharp (1958, p.143); on the other hand, has given them the name "Special Questions", i.e., those which contain an interrogative word from the restricted class of words like what, why, how, where, when etc. and which cannot be answered by simply saying yes or no.

3.1.2 H.R.-type: Phonetic Criterion: A high rise in pitch at the end of the clause-final word. (Additional criteria are provided by the pitch-patterns of Tone-2 and Tone-1 words in the penultimate position, as in (7) and (8) respectively: mid level-mid level and mid fall-low rising to mid).

Examples:

(7) pà      tərda      ría?

'Did brother keep swimming?'



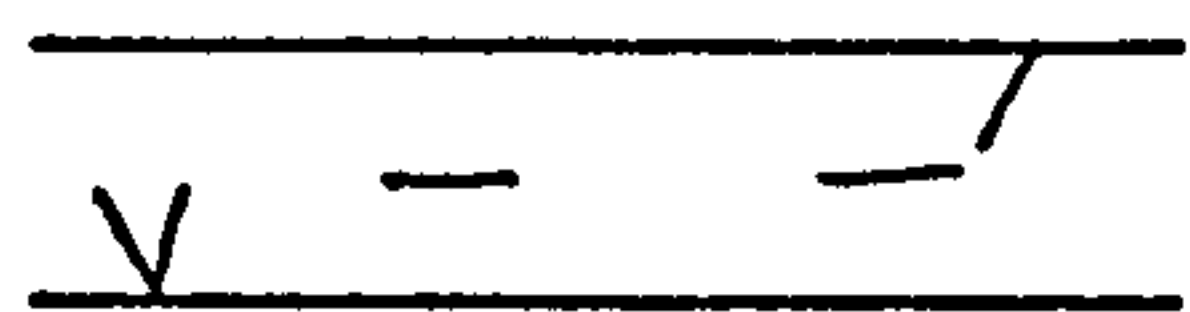
(8) tar      kũmda      ría?

'Did Tar keep roaming about?'



(9) pà šér gia?

'Did brother go to the city?'



(10) ó kèr gia?

'Did he go home?'



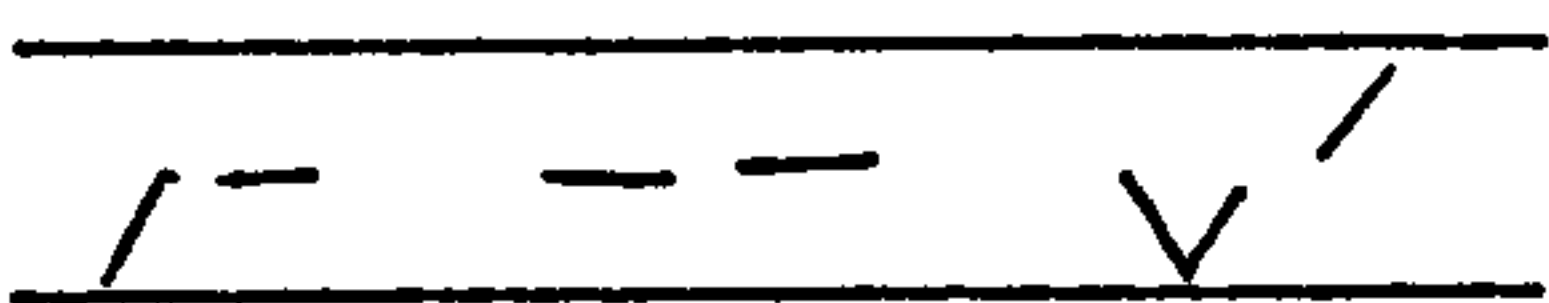
(11) taro šérõ pèj:i?

'Did Taro flee from the city?'



(12) ónẽ laṭhi pèn:i?

'Did he break the stick?'



It becomes clear from the examples (7) to (10) given in (3.1.2) above, that when a given clause is spoken with H.R.-type of intonation, the pitch of the clause-final word rises from mid to high at the end of the word. This is also a marker of finality in Doabi sentences. This feature is very important since it helps in keeping this particular type distinguished from the rest. It must be noted here that the sharp rise in the pitch of the last syllable of the clause-final word in case of H.R.-clauses is not kept at the high level for a considerable amount of time to be perceived as such. So the hearer who does perceive the rise in pitch, may not perceive the high level. This feature along with word-initial mid level versus high level and fall-rise versus high level pitch helps to distinguish the H.R.-term of the prosodic sub-system from the H.Le.-term of the sub-system, where this

high level of pitch is maintained for a comparatively long period so as to be perceived as such (3.1.3).

The Tone-3 word *ría* is in the clause-final position in examples (7) and (8) above. The pitch of this word, at the end of the word, rises considerably high, to its maximum in both the examples. In example (7) the pitch of the last syllable rises from mid to high and the pitch of the first syllable is mid level which in turn is preceded by a mid level of pitch of both the syllables of Tone-2 word *tərda*. In example (8) also the pitch of the last syllable of *ría* rises from mid to high after a mid level in the first syllable but here the mid level is preceded by a falling pitch which rises to mid in the second syllable of Tone-1 word *kùmda*. The Tone-2 word *gia* in examples (9) and (10) also exhibits a similar pitch behaviour, i.e., the pitch of the last syllable rises after a mid level in the first. In examples (11) and (12) Tone-1 words *pəj:i* and *pən:i* respectively, have a different pitch pattern. The pitch of the last syllable in each rises from mid to high after the word-initial fall-rise.

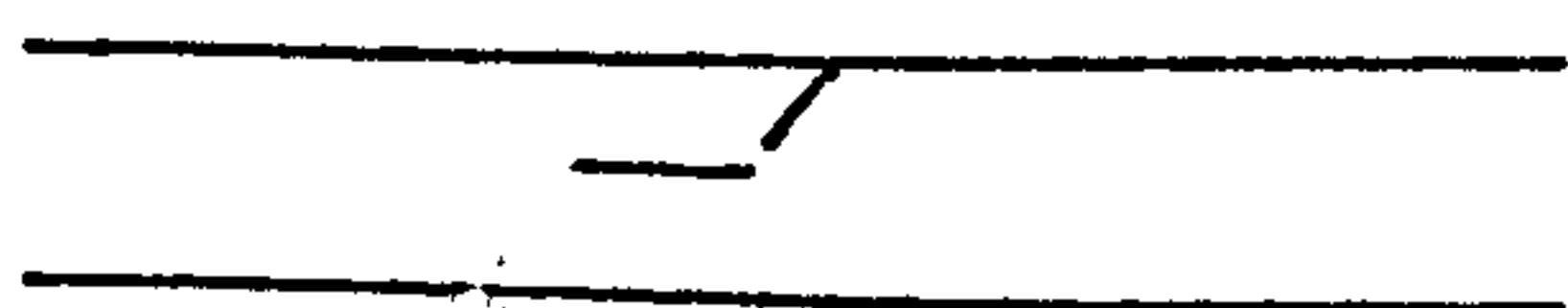
Clauses of this type (generally coextensive with the sentence which in turn may be coextensive with an utterance) include questions for which the most likely answers are simply yes or no. Halliday and Hasan (1976, p.208) call questions of this type "POLAR QUESTIONS". Such questions do not contain an interrogative word, unless these are echo-questions. The questions may be asked without any particular emphasis but can be answered by simply saying yes or no. It appears that



the speaker is seeking some sort of confirmation. These questions may be called CONFIRMATION QUESTIONS as opposed to the other type which are named INFORMATION QUESTIONS in 3.1.1 above.

The actual duration of the clause-final words in the examples (7) to (12) above, is short as compared with examples (1) to (6) in 3.1.1, i.e., the F-type. In fact the whole clause, not the clause-final words alone, is spoken rather quickly with this type of intonation. Almost all the examples show that a clause with the same lexical composition when spoken with H.R.-type, as compared with F-type, takes approximately 10c.s. to 20c.s. less.

It is worth noting here that in the H.R.-type of intonation Tone-3 and Tone-2 disyllabic words in the clause-final position share the same pitch-feature exponents: in examples (7) to (10) above the pitch pattern for the clause-final words is a mid level pitch followed by a high-rising pitch.

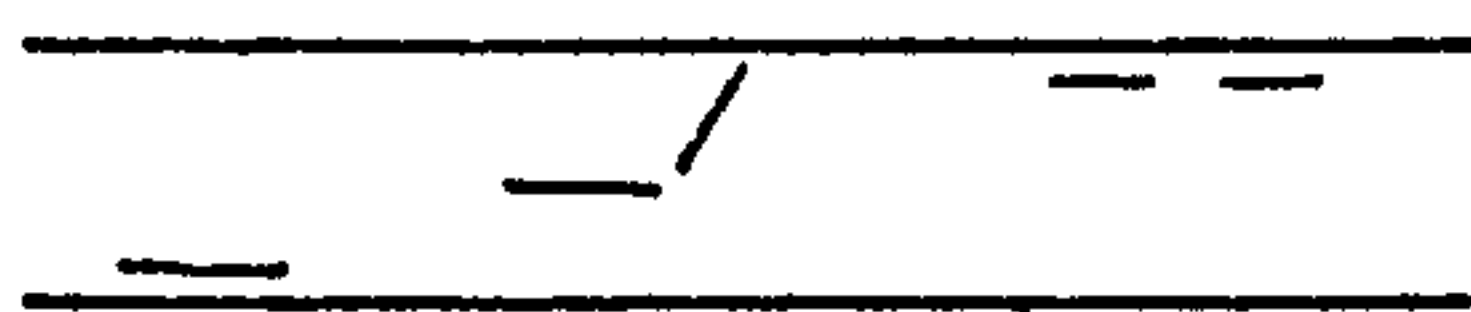


3.1.3 H.Le.-type: Phonetic Criterion: Word-final high level pitch. (Additional criteria are provided by Tone-2, and Tone-1 words in the penultimate position in (13) and (14) respectively. The pitch-patterns are: mid level-high rise and fall-rise, mid level.)

## Examples:

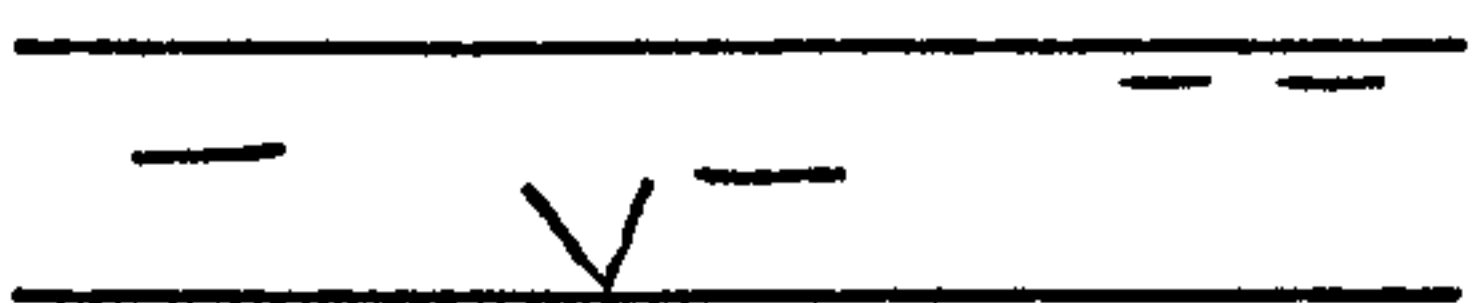
(13) pà tərda ría!

'Brother kept swimming!' (Did you say?)'



(14) tar kùmda ría!

'Tar kept roaming about!' (Did you say?)'



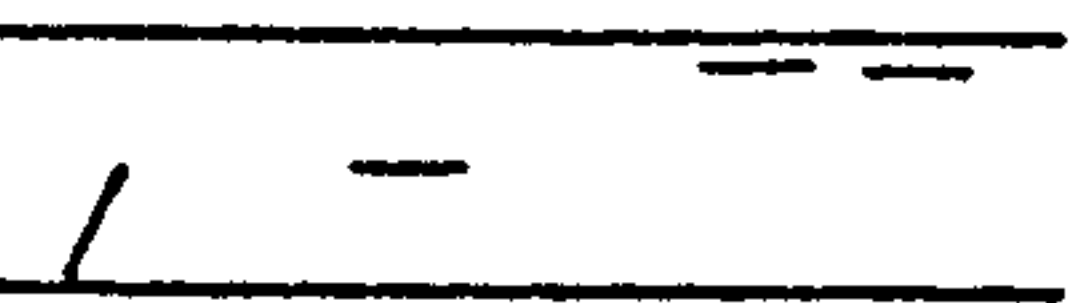
(15) pà šér gia!

'Brother went to the city!' (Did you say?)'



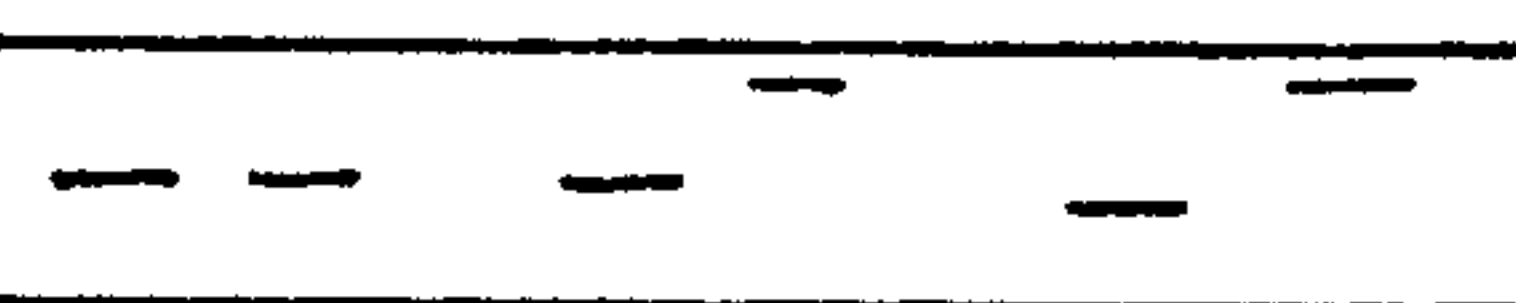
(16) ó kər gia!

'He went home! (Did you say?)'



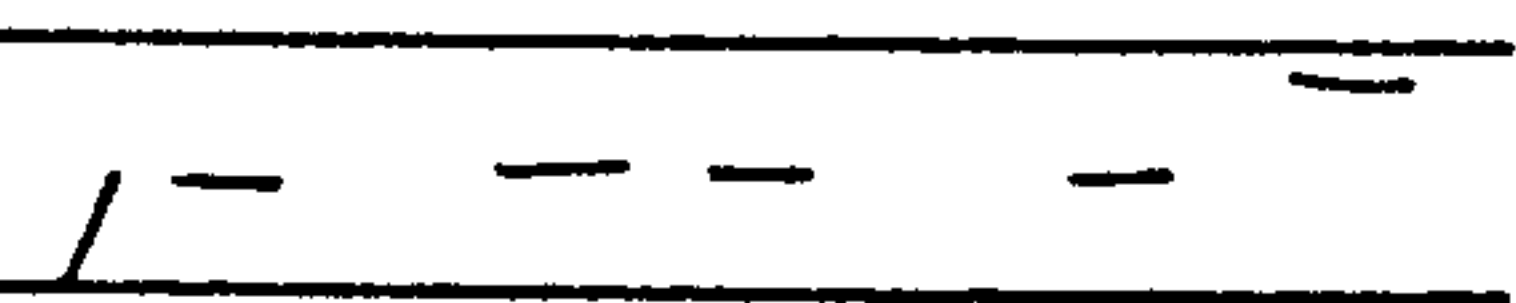
(17) taro šérō pəj:i!

'Taro fled from the city!' (Did you say?)'



(18) óně laṭhi pən:i!

'He broke the stick! (Did you say?)'



As can be seen in examples (13) to (16) above, the pitch of the clause-final <sup>word</sup> in the clause spoken with H.Le.-type of intonation is high level throughout in the case of Tone-3 and Tone-2 words. In the case of Tone-1 words, however, it is high level only at the end of the clause-final words, the word-initial pitch being mid level, as for example, in (17) and

(18) above. The rise in the pitch starts from the very beginning of the clause. The high level of pitch of these words is kept for a considerable amount of time so as to be noticed and perceived as such by the hearer(s). As has already been pointed out above (3.1.2), this feature is peculiar to H.Le.-type of intonation. It was noted earlier that the pitch of the clause-final verb word in a clause with H.R.-type of intonation also shows a sharp rise, but in that case the rise in the pitch is not maintained at a high level for a sufficient length of time to be perceived as such. In the case of H.Le.-clauses, however, the pitch does remain high level and is fairly easily perceived as high level.

The Tone-3 word *ría* is in the clause-final position in examples (13) and (14). The pitch of this word is high level which is preceded by mid level pitch rising to high in the Tone-2 word *tərda* as in example (13). In example (14) also the pitch of both the syllables of Tone-3 verb word *ría* is high level, although here it is preceded by fall-rise and mid level of pitch in Tone-1 word *kũmda*. Thus the pitch of this verb word is high level in both the examples. The pitch measurements taken from tonograms of these examples (Appendix IV B ) show that the variation in the pitch level of the two syllables, if at all there, is only from 0 Hz to 20Hz approximately, which I believe, is not perceptible. (The degree to which the ear disregards pitch differences seems to vary according to the place in the utterance; therefore, it is difficult to give any general figure which is ignored.



A rise or fall of 8 Hz in a level utterance seems not to be perceptible; but a difference of 12-13 Hz does seem to be perceptible, so the boundary must be between 8 and 12 Hz. In the beginning of the utterance 12.5 Hz fall in pitch and 23-24 Hz decline in pitch can be ignored; at the end of the first word a 35-42.5 Hz fall in pitch can be ignored.) In examples (15) and (16) the Tone-2 word *gia* is in the clause-final position. The pitch of this word too, in both the examples, is high level and the amount of variation is so small that it can be ignored. In examples (17) and (18) we find Tone-1 words *pəj:i* and *pən:i* in the clause-final position. These two seem to behave a little bit differently here in this position, from the words of the two other tones discussed before. The variation in the pitch of these two polysyllabic words is, no doubt, greater as compared with the previous examples (13) to (16), and perceptible too; but the fact remains that the pitch of the last syllable in these words is kept at a high level for a sufficient length of time to be perceived as such. As the rise starts from the very beginning of the clause, it was found difficult to represent the pitch of the individual syllables in examples (17) and (18) within the two lines. So the pitch-marks in these examples are only relative. The rise in the pitch and also its level is, however, certainly distinct from that noticed under the H.R.-term (3.1.2) of the Intonation System set up here in this thesis for Doabi clauses.

This type of intonation is employed by the native speaker when he is under the influence of some emotion like sudden shock, wonder, surprise etc. A given clause is spoken very

quickly with this type as compared with the F-term of the system (3.1.1). The whole clause is spoken at a fairly high tempo. The rise in pitch which starts with the beginning of the clause reaches a high level towards the end of the clause.

The clause-final word considered under this term of the system is shorter in duration than that under the H.R.-term, which is in turn shorter than the word under F-term of the Intonation sub-system stated for the 'Final'-clauses. The clause-final word with H.Le.-type of intonation is thus spoken more quickly than the same lexical item spoken with the H.R.-type.

A point worth mentioning here is that, as in the H.R.-type clauses (3.1.2), Tone-3 and Tone-2 phrase-final polysyllabic words share the same pitch feature exponents with H.Le.-type of Intonation: the pitch pattern in examples (13) to (16) above is a high level pitch followed by another high level pitch (the H.R. is rising and quite different).

### 3.2 NON-FINAL (Non-sentence-final clause)

#### 3.2.1 M.Le.-type: Phonetic Criterion: Clause-final mid level pitch.

(19) ó kər gia, (pər kɪsə nũ dəs:ɪa nɔ̃ĩ.).

\_\_\_\_\_

/ V — —

\_\_\_\_\_

'He went home, (but did not tell anyone).'

(20) kaka pas ho gia, (pər mənũ khuʃi nɔ̃ĩ hoi).

\_\_\_\_\_

— — — — —

\_\_\_\_\_

'Kaka has passed the examination, (but that does not make me happy).'

(21) pòla kél aya si, (pər rukia nǝĩ).



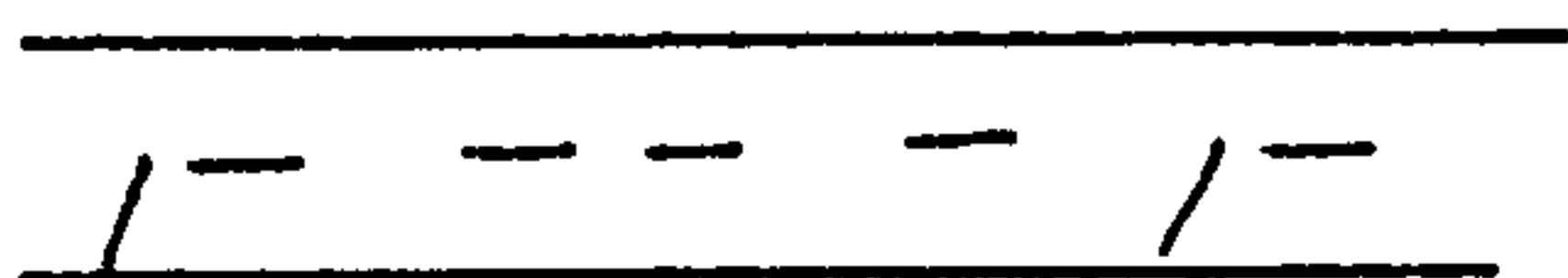
'Bhola had come yesterday, (but did not stay).'

(22) mē ónũ kía, (pər óne supia i nǝĩ).



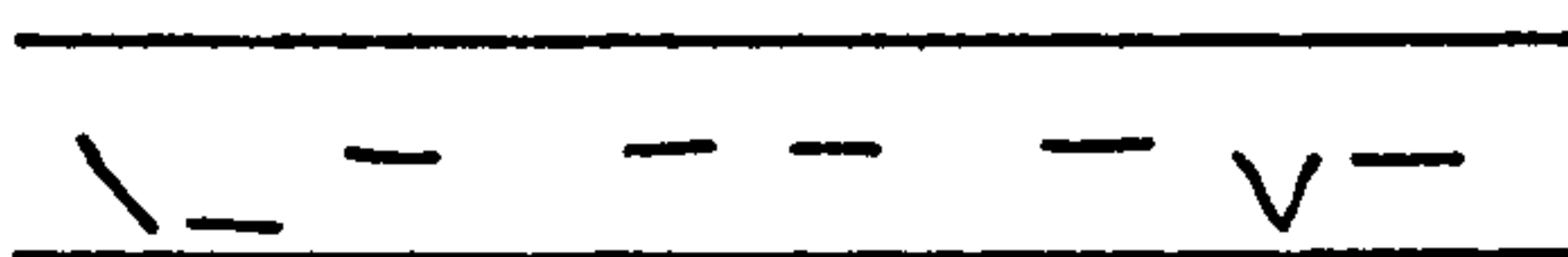
'I told him, (but he did not listen).'

(23) ónũ pesa tã léb:a, (pər ó bədliia nǝĩ).'



'He did find the money, (but that did not change him).'

(24) tòbine kəpɾe tã tòtɛ, (pər sukɔɾe pʊl: gia).



'The washerman did wash the clothes, (but forgot to dry them).'

(25) mǎne cɔɭ tǎre, (pər luɳ pɔɳǎ pʊl: gəi).



'Mother did cook the rice, (but forgot to add salt).'

The last syllable of the clause-final verb-word in a clause, spoken with M.Le.-type of intonation, has a mid level pitch, as may be clear from the examples (19) to (25) given in 3.2.1 above. This level pitch is clearly distinct, by its lower pitch level, from the high level pitch that was noticed in connection with the H.Le. term of the system (3.1.3) set up



for the Final-clauses. In fact, this mid level of the pitch of the last syllable of the clause-final word, in combination with word-initial mid level pitch in Tone-2 lexical items, low-rising in Tone-3 and falling-rising in Tone-1 words is the feature to keep this type of intonation distinct from the rest. In addition, it marks the non-finality of Doabi clauses.

An attempt has been made in examples (19) to (25) to present a fair sample representative of this type of Doabi intonation. The focus of attention is the pitch behaviour of the last syllable of the phrase-final word in the clause-final position in each of the examples given above. In examples (19) to (21) Tone-2 phrase-final words are in the clause-final position. The pitch of the last syllable of the phrases *gia* in (19), *ho gia* in (20), and *aya si* in (21) respectively remains at the mid level. The Tone-3 words *kía* and *léb:a* in examples (22) and (23) are in the clause-final position in non-sentence-final clause. The pitch feature exponents show that these words too end on a mid level pitch after an initial rise from low to mid. In examples (24) and (25) the Tone-1 words *tòte* and *tère* which are clause-final, also exhibit a similar pattern: the pitch of the last syllable is mid level, and is preceded by a falling-rising pitch in each case.

The point worth mentioning here is that examples quoted above are of those clauses that form a part of a larger piece, a sentence; they are thus not coterminous with the sentence, or the utterance in Doabi. This type of intonation is used

when the speaker would like to continue with what was being said before, without any intention to stop and wait for other speaker(s) to start.

3.2.2 L.R.-type: Phonetic Criteria: the following complementarily distributed features serve as criteria:

- (i) clause-final rise in pitch from low to mid (Tone-1, Tone-2)
- (ii) clause-final fall in pitch to mid (Tone-3)

Examples:

(26) tusĩ huṇ jao; (pher cahe a jaṇa).

— — — — /

'You should go now; (you may come later).'

(27) óne kəm: kəraya ; (te cəliə gīa).

/ — — — /

'He got his work done; ( and went away).'

(28) mere kər aĩ; (te sari gəl: dəs:ĩ).

— — √ — /

'Come to my place; (and tell me all about it).'

(29) mē ciṭ:hi lıkhā; (ke nā).

— — — — /

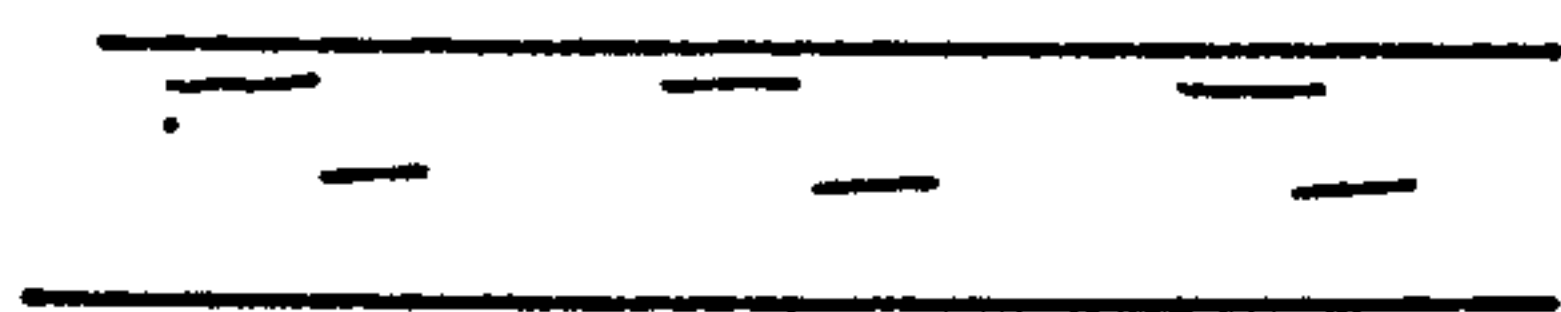
'Should I write a letter; (or should I not)?'

(30) jānda; jāndi; jānde;

— / — / — /

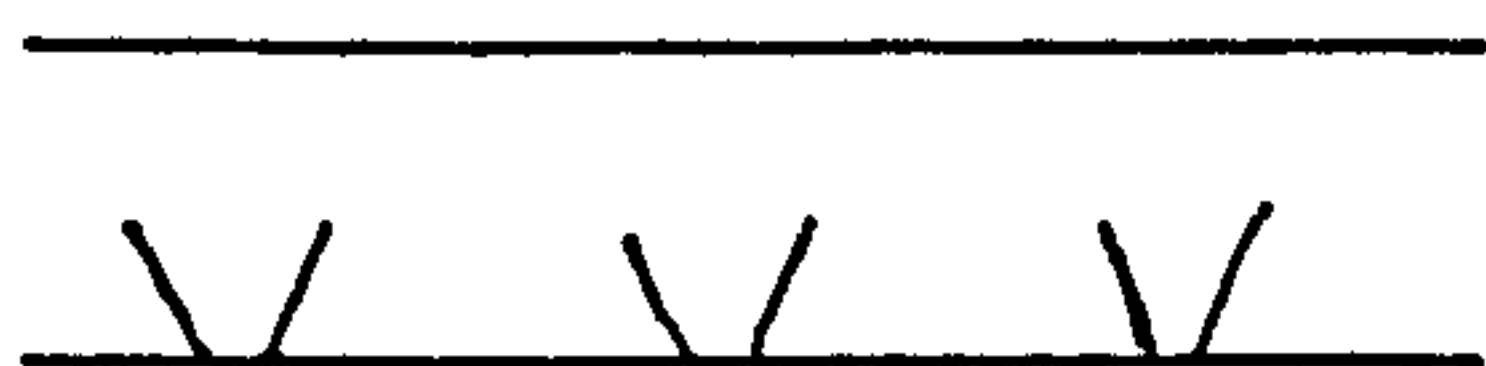
.'(He) going; (She) going; (They) going;'

(31) pérda; pérđi; pérde;



'(He) reading; (She) reading; (They) reading;'

(32) càrda; càrđi; càrde;



'(He) brushing; (She) brushing; (They) brushing;'

For Tone-2 words in the clause-final position in clauses exemplified in examples (26) to (30), there is a rise in the pitch which is one of the exponents of this type. The rise in the pitch is also noticeable in example (32) for Tone-1 words although with a preceding word-initial fall. The pitch in case of Tone-3 words as exemplified in example (31) with this particular type of intonation, however, falls slightly - from high to mid. The important point to be noted is the starting point of the rise, where present.

As is quite clear from the pitch representation in examples (26) to (30) the rise in pitch from low to mid is an exponent of Tone-2 and Tone-1 words in the clause-final positions though it is preceded by a word-initial fall in the case of Tone-1 words. In example (32) the pitch of the ultimate syllable in each case rises from low to mid. This rise, however, is quite distinct from the one noticed earlier in the case of H.R.-type of intonation for Final clauses. The rise (where present) in the case of L.R.-type



clauses having Tone-2 and Tone-1 words in the clause-final position, not only starts from a lower level, it also finishes lower than that of H.R.-type. It does not reach higher than the mid level. In the case of Tone-3 verb words, as pointed out above, there is a fall in the pitch from high to mid. This fall is certainly different from that of the F-type of Final-clause where it falls from mid to low.






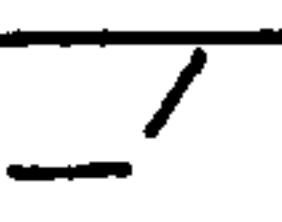

The clauses of this type are necessarily non-final in the sentence. Thus, a low rising pitch may be used as one of the criteria of non-finality of Punjabi sentences (and utterances). This type of intonation is used for certain statements and only exceptionally for questions and suggestions. For listing, however, this is the only type used. The potentiality of pause is very small.

3.3 INTONATION TYPES AND PITCH-FEATURES OF TONES: The pitch patterns of Tone-1, Tone-2 and Tone-3 verb words in the clause-final position with different terms of the two sub-systems set up for the FINAL and NON-FINAL clauses are summarized in 3.3.1 below; pitch patterns of those Tone-1, Tone-2 and Tone-3 words which are in the non-clause-final position are summarized in 3.3.2.

3.3.1 CLAUSE-FINAL WORDS:

		<u>INTONATION</u>	
		FINAL	NON-FINAL
		F                      H.R.                      H.Le.	M.Le.                      L.R.
TONE-1		$\backslash \backslash, \backslash / \backslash$ $\backslash /$ $-$	$\backslash -$ $\backslash /$
TONE-2		$\backslash -$ $- \backslash -$ $- /$ $-$	$- -$ $- /$
TONE-3		$\wedge -$ $/ \backslash -$ $- /$ $-$	$/ -$ $-$

### 3.3.2 NON-CLAUSE-FINAL WORDS:

	F	H.R.	H.Le.	M.Le.	L.R.
TONE-1					
TONE-2					
TONE-3					

As can be seen from the pitch patterns of Tone-1 and Tone-2 given in 3.3.2, the Tone-1 lexical item has different pitch patterns corresponding to the different intonation types. For Tone-2, there are two pitch patterns: level-level and level-high rise, first of which corresponds to F, H.R., and M.Le. terms where the word is in the penultimate position, and the second goes with H.Le. term of the system. Tone-1 word in penultimate position has mid fall-low level for F, mid fall-mid rise for H.R., and fall-rise-mid level for H.Le. These can, thus, be used as additional criteria for the different terms of the intonation system along with the phonetic criteria already given for each term.

## CHAPTER IV

### TONE

4.0            INTRODUCTION: The term 'tone' has been variously defined. The difference of opinion crops up when the question of the domain of tone is considered. The units suggested have been: part of a syllable (Pike 1948 p.3) or a syllable (Pike 1948 p.3), a word (Sprigg 1954 p.150; Abercrombie 1967 p.104 ) and a group of words (Kloster Jensen 1961 p.24). For Punjabi all these have been suggested respectively by Bailey (1914p.xv), Gill and Gleason (1963 p.44) Joshi (1973, p.10) and Awan (1974 p.25). It would not be out of place here to have a brief look at the different positions taken by scholars.

Carnochan (1964, p.399) defines pitch as "a sensation, perceived by the listener and referable to a scale, as well as being related to the frequency with which the vocal cords of the speaker open and close during the utterance and which is measurable by instrumental techniques." In other words, we can say that pitch is something like a musical sensation, related to the rate of vibration of the vocal cords of the speaker. The pitch of an utterance can be measured with the help of certain instruments in terms of frequency values of the fundamental. High frequency of the fundamental relates to high pitch and low frequency relates to low pitch. In Punjabi speech, as in other languages, it is the relation of the pitch of one syllable or word to another in the clause that is important and not the actual pitch.

Normally, a constant pitch is very rarely, if ever, maintained in speaking. The pitch of the voice, on the contrary keeps fluctuating continuously. This phenomenon of pitch fluctuation is not confined to a particular group of languages. It is, on the other hand, a universal phenomenon, which is present in the speech of all communities. "Pitch fluctuation, in its linguistic function, may conveniently be called speech melody. Speech melody is part of the spoken form of the language, just as its segments." (Abercrombie 1967 p.104).

When one word lexical item (commonly a syllable) in a language is distinguished from another simply because of the speech melody patterns, the patterns are known as Tone. The speech melody pattern is known as Intonation when it serves to distinguish between two otherwise identical units larger than the word, i.e., clause, sentence etc.

In the words of Pike, "a tone language may be defined as a language having lexically significant, contrastive but relative pitch on each syllable", (Pike 1948, p.3). The position is clarified by adding that, "significant pitch distinguishes the meaning of utterances. When pitch is lexical, it distinguishes the meaning of words". He emphasises one point further when he says that "each syllable of a tone language carries at least one significant pitch unit. Most frequently there is one-to-one correlation between the number of syllables and the number of tonemes in any specific utterance..... A disyllabic word has two syllables and at least two tonemes." (pp.4-5).



Pike allows that, "there may exist languages which one desires to call tonal because, although they do not have contrastive pitch on each syllable, they do have lexically significant contrastive pitch spread over entire words or morphemes. In this book, however, the syllable type of toneme must be present for a language to be labeled tonal", (Pike 1948, p.5).

Thus, for Pike in his early publications, the domain of the tone is a syllable. At least one toneme per syllable must be present in a language to be termed 'tonal' according to Pike.

For Abercrombie, on the other hand, the unit is a word. While discussing the linguistic functions of speech melody he says, "The linguistic functions of speech melody are very varied, but of two fundamentally different kinds. In one case, <sup>^</sup>their function is to be part of the structure of words. In the former case, the patterns are called INTONATION, and in the latter case they are called TONE". (Abercrombie, 1967, p.104).

Gill and Gleason (1963, p.48) seem to be in agreement with Abercrombie when they simply ignore Pike's definition by not accepting significant pitch on each syllable as a criterion for Punjabi. According to Gill and Gleason, "there is one tone onset on every word.... the occurrence of a tone may be taken to mark a phonologic word, generally equivalent to a morphologic word."

*^ the function of the speech melody patterns is to be part of the structure of sentences; in the other case,*

Bahl (1957, p.146) states that, "the position of tone in Punjabi is significant in a word." He does not, however, mean that a word can contain more than one tone. Grahame Bailey (1914 p.xv) takes a slightly different position when he remarks that, "Syllables containing both tones are quite common, the low tone always coming first." In fact the confusion is a result of not keeping PITCH and TONE separate. What he perhaps meant was that in words like [pabi] 'sister-in-law', the pitch contour is a fall in pitch followed by a rise. The tonal classification of Bailey is marking such words as having a "low rising" tone which corresponds to Tone-1 of Joshi (1973, p.10).

Awan (1974, p.25) has taken up a different position altogether. Following Kloster Jensen (1961, p.24), who based his tonal statement of the tonal Norwegian dialects on the phrase, Awan finds "evidence in Hindko for making the unit for tonal statement not the word but the phrase, which in Hindko may contain from one to three words."

Kloster Jensen's views are as follows:

"Though tonemes can be demonstrated to be realized in all non-oxytons and therefore increase their segmental span as the number of stressed syllables is reduced in fluent speech, wherefore they may as well be considered as typical of stress groups without of course therefore belonging to the intonational system and no longer characterizing the word form as such. Shifting of stress often involves tonemic variation - (1.5)." (p.53)

"These considerations extenuate the view that tonemes are word accent. They could be more properly characterized as word group accents or measure features .... but recognition of tonemic contrast in word groups helps to realize that tonemicity in Scandinavian sometimes differentiates longer units than word forms ( e.g. "g<sup>o</sup>å hjem"), with the consequence that its function borders or encroaches upon that of intonation." (M. Kloster Jensen 1961, p.24)

(Since, however, Sommerfelt (1957)<sup>1</sup> states that it is only in polysyllabic words in Norwegian that a distinction is made in the two tones: Simple and Compound, but Kloster Jensen's phrase g<sup>o</sup>å hjem seems to be of two monosyllabic words g<sup>o</sup>å and hjem meaning 'go' and 'home' respectively, the relevance of his example is not clear to me.)

Awan (1974, p.25) states that, "whether tone is a property of the syllable, the word or group of words depends on the language under study. So far as Hindko is concerned tone should be regarded to be a property of the phrase." With the help of an illustration (p.28) he makes it clear that, "the distinction of pitch pattern applies not only to the first word of the verbal phrase (i.e. the Main Verb) but also to the remaining words of the phrase (i.e. Operator and Auxiliary). In other words the tone applies to the phrase as a whole."

If tone is to be regarded in relation to the syllable, a picture like the following emerges:

---

1. cf. Haugen (1967, 192).

S.No.	No. of Tonemes	No. of Syllables	Language(s)
1.	More than one	One	Mazateco
2.	One	One	Vietnamese
3.	One	More than one	Punjabi

but if it is to be regarded in relation to the word, the emerging picture should look like this:





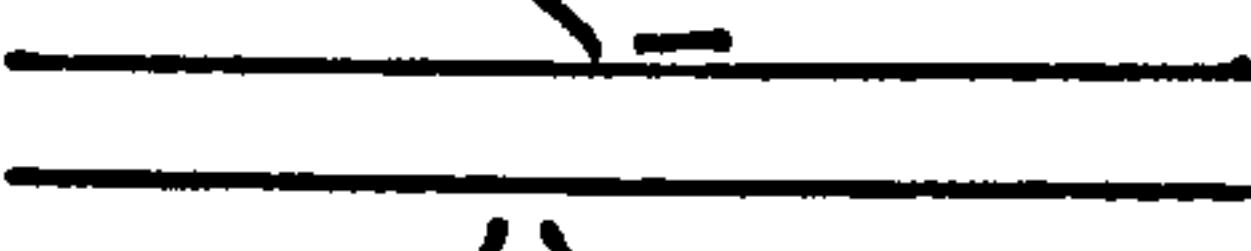

S.No.	No. of Tonemes	No. of Words	Language(s)
1.	More than one	One	Yoruba
2.	One	One	Punjabi
3.	One	More than one	Norwegian/ Hindko

In this thesis, however, tone is taken to be a word prosody. It is thus not the property of certain syllables only, but applies to the whole word as a unit. The tonal contour is spread over the entire word. Particles, however, if any, need not be given their own tonal classification; as they are not restricted to words of one Tone or the other, but may be included in words of any of the three tones. They have a share in the tonal features of the words in which they occur. In Junction they are separated grammatically.






A three-term tonal system has been stated here for the Doabi dialect of Punjabi on the basis of the following sets of sentences and those like them. The same holds good for some other dialects namely, Majhi<sup>1</sup> (Gill and Gleason, 1963), Puadhi (Sandhu, 1968) and Malwai (Gill, 1975). Awan (1974, p.28), has, however, set up a two-term system for Hindko.

(i) One-Word Sentences:

(a)	TONE-1	kəṛ.	'chisel'		F
	TONE-2	kəṛ.	'fetter'		F
	TONE-3	kəṛ.	'boil'		F
(b)	TONE-1	kəṛia.	'chiselled'		F
	TONE-2	kəṛia.	'fettered'		F
	TONE-3	kəṛia	'boiled'		F

(ii) Two-Word Sentences:

(i)	TONE-1	kəṛi a.	'It is chiselled.'		F
	TONE-2	kəṛi a.	'It is fettered.'		F
	TONE-3	kəṛi a.	'It is boiled.'		F

The three terms of the tonal system are:

- (a) TONE-1 (4.1.1; 4.2.1; 4.3.1; 4.4.1)
- (b) TONE-2 (4.1.2; 4.2.2; 4.3.2; 4.4.2)
- (c) TONE-3 (4.1.3; 4.2.3; 4.3.3; 3.4.3)

In this thesis no descriptive label has been given to the Tones of Punjabi. All three have different pitch exponents in different intonational contexts (see 3.3). Numbers, rather

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1. Cf. T. Grahame Bailey (1919, xii): "Punjabi is a tone language like Chinese, but the tones do not play so important a part in speaking. There are four tones: ..."

than descriptive labels have been selected in that they are free from any presuppositions.

The phonetic exponents of each term of the tonal-system may be grouped under the following four headings:

- (1) Pitch features (4.1)
- (2) Phonation features (4.2)
- (3) Word-initial features (4.3)
- (4) Word-final features (4.4)

4.1            Pitch-feature exponents: The pitch-feature exponents of Tone-1 (4.1.1), Tone-2 (4.1.2) and Tone-3 (4.1.3) respectively are as follows:

4.1.1        Tone-1: A fall in pitch followed by a rise is the most characteristic feature of the clause-final verb words of this tone for all terms of each of the two Intonation Systems: sentence Final and Non-sentence Final but with the exception of the H.Le. term of the sentence Final Intonation System (3.1.3). Though common to all those terms of the Intonation System, this pitch-feature is confined in most cases to the word-initial which could be followed by a mid fall (3.1.1), a high rise (3.1.2), or a mid level of pitch (3.2.1) of the clause-final syllable in accordance with clause intonation (cf. Appendix IV B tracings 11, 17, 29).

The fall in pitch starts a little above the mid level, falls to low, where it may remain level for sometime, and then rises to about mid level again. The rise in all the cases does not necessarily reach the same level as that of the beginning point.

MONOSYLLABIC WORDS: In a monosyllabic word the fall and rise in pitch is a feature of the same syllable. The rise towards the end of the syllable is more distinct in the words with long vowels, as in [càɾ] 'brush', cf. [pèr] 'fill'. In closed monosyllabic words the rise is more clearly heard than in open monosyllabic words. Thus the rise in pitch, after an initial fall, is more clearly perceptible in [tùɾ] 'sprinkle' than in [tù] 'drag'.

DISYLLABIC WORDS: Either of the two syllables could be the stressed syllable in a disyllabic word. The unstressed syllable in such cases has different pitch possibilities. If it precedes the stressed syllable, the pitch is at the same level as that of the beginning point of the stressed syllable. Thus a Tone-1 causative verb form like [kəɾà] 'get chiselled', with stress on the ultimate syllable has a pitch pattern like [ˉV]. But if the unstressed syllable follows the stressed syllable in the word, the rise in pitch is a feature of this syllable, the fall being that of the initial stressed syllable in the word, as in 3.1.2 (8) and 3.2.2 (32) [V/]. With the H.Le.-type of intonation [kùmda] in 3.1.3 (14) has the last syllable unstressed. The pitch of this syllable, which follows an initial stressed syllable in the word, remains at the same level as that of the end point of the stressed syllable [Vˉ], the fall and rise in pitch being a feature of the initial stressed syllable. In 3.1.3 (17,18), however, in the clause-final position there is a different pitch pattern: the pitch of the last unstressed syllable is high level, whereas that of the preceding stressed syllable is mid level.



TRISYLLABIC WORDS: In trisyllabic words like [kəɾàya] 'got chiselled', the pitch-pattern observed is [↘/]. In such cases the penultimate syllable is the stressed syllable. The pitch of the initial unstressed syllable is at the same level as that of the beginning point of the stressed syllable. The rise in the pitch can be observed in the last syllable, whereas the fall is a feature of the stressed syllable. The case is different if the initial syllable is the stressed syllable in a word like [pəɾkaya] 'incited' having a pitch-pattern [↘/ˀ]. The pitch of the ultimate syllable in such a case is at the same level as that of the end point of the rise, which is a feature of the penultimate syllable, the fall in pitch being a feature of the initial syllable in the word. With F-term of the intonation system, however, the pitch-pattern may still be different, as in a word like [kəɾia] 'chiselled' [↘/↘]. The pitch of the last unstressed syllable falls from mid. The pitch of the word-initial stressed syllable also falls but that of the penultimate unstressed syllable rises to mid.

Other variant pitch-patterns are:

(i) With the F-term of the intonation system the pitch-patterns are:

- (a) For a word like [kùmda] in the non-clause-final position, as in 3.1.1(2), a fall in pitch from mid followed by a low level pitch [↘\_].
- (b) In the clause-final position a disyllabic word like [pəj:i] as in 3.1.1 (5), fall and rise in pitch in the first syllable followed by a fall from mid [↘↘].



(ii) With H.R. the pitch-pattern for the clause-final Tone-1 word shows a fall-rise in the first syllable followed by a high rise in the second as in 3.1.2(11) [ $\vee'$ ].

(iii) With the H.Le.-term of the Final-clause intonation system the pitch-pattern for the clause-final polysyllabic Tone-1 word as in 3.1.3(17,18) is a mid level pitch in the first syllable followed by a high level pitch [ $-^{\text{H}}$ ].

(iv) For the M.Le.-term of the Non-Final intonation system, the pitch-pattern for a Tone-1 word like [tòtè] is [ $\vee^-$ ] as in 3.2.1(24); fall and rise in the first syllable followed by a mid level pitch in the last-clause-final syllable.

The position can be summarized in the following table (4.1):

TABLE 4.1

TONE-1: PITCH-FEATURES

S.No.	Clause type	Non-clause final	Clause final	Sec.No.
1.	F	$\underline{\quad \vee - \quad}$ (2)	$\underline{\quad \vee \Delta \quad}$ (5) (6)	3.1.1
2.	H.R.	$\underline{\quad \vee / \quad}$ (8)	$\underline{\quad \vee' \quad}$ (11) (12)	3.1.2
3.	H.Le.	$\underline{\quad \vee - \quad}$ (14)	$\underline{\quad -^{\text{H}} \quad}$ (17) (18)	3.1.3
4.	M.Le.		$\underline{\quad \vee - \quad}$ (24) (25)	3.2.1
5.	L.R.		$\underline{\quad \vee \vee \quad}$ (32)	3.2.2

4.1.2 TONE-2: A level pitch is the most common feature of the pitch exponents of this tone. In the non-phrase-final position (and, hence in the non-clause-final position) the pitch of Tone-2 verb words is mid level with the F (3.1.1) and H.R. (3.1.2) terms of the system for the Final clauses, and with the M.Le. term (3.2.1) of the Non-final clauses. With the H.Le. (3.1.3) and L.R. (3.2.2) terms respectively, however, the pitch rises high after a mid level for the former and may rise to mid for the latter.

The tonal contour starts at about mid level, slightly lower than the beginning point of Tone-1, remains level and may end a little higher than the end point of Tone-1. Thus there is no initial fall in pitch, which is a characteristic pitch-feature of Tone-1. This serves as a cue to keep the two terms of the tonal system distinguished from each other.

MONOSYLLABIC WORDS: In monosyllabic words the pitch-feature described is a feature of the syllable exemplified. The rise in pitch towards the end, if there, is more distinct and clear in closed monosyllabic words than in words with open monosyllables. Thus the rise in [uɾ] 'fly' and [muɾ] 'turn' is more clear and distinct than in [a] 'come', and [pa] 'put in'.

DISYLLABIC WORDS: Only one syllable in Doabi polysyllabic verb-words is stressed. In a disyllabic verb word, if it is the penultimate syllable that is stress-bearing, the rise, if any, is a feature of the ultimate syllable, e.g. [gia] [ - / ] (H.R.)3.1.2; but if the ultimate syllable is stressed, no rise is noticed and both the syllables are at the mid level of pitch as in [kəra] [ - - ] (M.Le.)3.2.1.

TRISYLLABIC WORDS: In trisyllabic verb words like [kəraya] 'got done', [cukaya] 'helped lift', where the penultimate syllable is the stress-bearing, the very slight rise in pitch, where present, is a feature of the following syllable. The initial syllable has a pitch level with the pitch of the beginning of the stressed syllable --- (27) 3.2.1.

The statements made above apply to all the verb words of Tone-2 (both causative and non-causative) unlike Tone-3 in causative verb forms which need different treatment from other verb forms (i.e. non-causative verb forms).

Other variant pitch-patterns that have been noted are:

(a) Non-final in the phrase (and clause):

(i) A mid level pitch followed by a mid level in the word in the non-final position in the clause ---, as for example in F (1) (3.1.1); H.R. (7) (3.1.2); M.Le. (20) (21) (3.2.1).

(ii) A mid level pitch followed by a mid rise in the second syllable in the word which is in non-final position in a clause with H.Le.-term of the Intonation System as in (13) (3.1.3) ---.

(b) Final in the phrase (and clause)

(i) A disyllabic word in the clause final position with F-type of Intonation has a pitch-pattern: mid fall in the first syllable followed by a low level in the second --- as in (3), (4) (3.1.1).

(ii) With H.R. term (3.1.2) of the Intonation System for Final clauses, a word like [gia] has a mid level pitch












in the first syllable which rises from mid to high in the second syllable as in examples (9) and (10)

—/.

- (iii) The pitch pattern noted for [gia] in the clause-final position with H.Le. (3.1.3) type of intonation is: a high level pitch in the first syllable followed by high level pitch in the second — as in examples (15) and (16).
- (iv) In the clause-final position in a non-final clause, with M.Le. type (3.2.1) of Intonation, a verb word like [gia] has a pitch pattern: a mid level pitch in the first syllable followed by a mid level pitch in the clause-final syllable (—) — as in example (19).
- (v) With L.R. type (3.2.2) of non-final clause, a word like [kəraya] (27) in the clause-final position has: a low level in the first syllable followed by a low level in the second and a low-rising in the third (clause-final) syllable — —/ ; in examples (26), (28)-(30) the pitch pattern is: a low rising pitch in the second —/ .

The position can be summarized as in Table 4.2:



S.No.	Intonation Type	Non-final in the clause	Final in the clause	Sec. No.
1.	F	 (1)	 (3) (4)	3.1.1
2.	H.R.	 (7)	 (9) (10)	3.1.2
3.	H.Le.	 (13)	 (15) (16)	3.1.3
4.	M.Le.	 (21)	 (19)-(21)	3.2.1
5.	L.R.		 (26)-(29)	3.2.2

4.1.3 TONE-3: Since the pitch-feature exponents of Tone-3 in causative verb forms are quite different from those of Tone-3 in non-causative verb forms two separate statements are needed; dealing first with all those that are not causative (4.1.3.1) and secondly (4.1.3.2) causative forms of Tone-3 verbs.

4.1.3.1 NON-CAUSATIVE: A rise in pitch followed by a fall is the most common feature of the various pitch exponents of Tone-3 non-causative verbs. This pitch feature is common to examples found in statistically the most commonly occurring term of the Intonation System, i.e., F-term (3.1.1). The fall, however, does not reach the same level as that of the beginning point of the rise. The contour of this tone is different from that of Tone-1 (4.1.1) in that there is no initial fall in pitch. It is different from that of Tone-2 (4.1.2) in that there is an initial rise in Tone-3 (non-causative forms) which is not there in Tone-2.

MONOSYLLABIC WORDS: In monosyllabic words, the fall in pitch after the initial rise, if any, is not very distinct in verb words with open monosyllables, as in [pí] 'grind', [ké] 'say', [bé] 'sit' and [lá] 'detach' etc. In closed monosyllables, however, the rise and fall are both clearly heard as in [cér] 'climb', [kár] 'boil', [dól] 'spill' etc. The fall in pitch seems to be more distinct if the final consonant is unaspirated and voiceless as in [sít] 'throw away', [khíc] 'pull', [thúk] 'spit' etc., than if the word ends in a voiced plosive, as in [sám̐b] 'keep safe', [míd] 'crush', [kéð] 'draw', [sǔŋg] 'smell' etc.

DISYLLABIC WORDS: One or other of the two syllables in a disyllabic verb word can be the stressed syllable. If the first syllable is stressed, the fall in pitch is the feature of the unstressed second syllable as in [béðu] 'he will cut' [sóði] 'it was corrected', [róřã] 'may I spill?' etc. In some cases, as in the clause-final position in sentence-final clauses, for example, in the F-type (3.1.1) clauses in a word like [ría], the rise and fall is a feature of the penultimate syllable which is stressed, the pitch of the ultimate syllable in such a case being on the same level as that of the end point of the stressed syllable. If, on the other hand, the ultimate syllable is stressed, the rise and fall in pitch is a feature of this syllable, the pitch of the preceding unstressed syllable being on the same level as that of the beginning point of the ultimate syllable, as in [səlá] 'praise'

TRISYLLABIC WORDS: In trisyllabic verb words, most commonly, it is the penultimate syllable that is stress bearing. The initial unstressed syllable, as in [səlóna] 'to praise', has a pitch that is in level with that of the beginning point of the penultimate syllable. The fall in pitch, after the rise in the stressed syllable, is a feature of the unstressed syllable in the word —/Δ—. If, however, the pre-penultimate syllable in a trisyllabic verb word is stressed, as in verb words like [bédia] 'cut', [sódia] 'corrected' [mídia] 'crushed' etc., the fall in pitch is a feature of the unstressed penultimate syllable. The pitch of the ultimate syllable in such cases being on the same level as that of the end point of the pitch of the penultimate syllable Δ—. The initial stressed syllable shows the rise in pitch in such cases.

4.1.3.2 TONE-3 CAUSATIVES: Statements made in the foregoing section (4.1.3.1) do not apply to Tone-3 in causative verb forms: they behave quite differently, having more in common with comparable Tone-1 pitch patterns than those described above for Tone-3 non-causative verbs, and require a separate treatment as regards pitch-exponency. Thus, it is the fall and rise in pitch that is the feature of causatives not the rise-fall that has been stated for the non-causative verb form. It is the ultimate syllable in a disyllabic Tone-3 causative verb that is stressed, as for example in [kəda] 'help draw out'. In such cases, fall and rise in pitch is a feature of the stressed syllable, the pitch of the non-stressed



initial-syllable being on the same level as that of the beginning point of the syllable that is stressed in the word

-v.

In trisyllabic Tone-3 causative verb forms, the penultimate syllable is the stress/bearing syllable, as in [kəḍòṇã] 'to help draw out', [ləbàya] 'helped found', [pəṛàya] 'taught', etc. The fall in the pitch is a feature of this (penultimate) syllable, the rise being that of the following - ultimate-syllable. The initial syllable in such cases has a pitch which is level with the starting point of the pitch of the stressed syllable in the word -v.

Unlike Tone-2 verbs, the pitch-feature exponents of Tone-3 verbs in their causative forms are identical with certain pitch features of Tone-1 polysyllabic verb words. Thus, a fall in pitch followed by a rise as a whole or a part of the verb word is a characteristic pitch-exponent of both Tone-1 in polysyllabic words and Tone-3 in causative verb forms. In addition, the Tone-3 causative verb forms are spoken with the same type of phonation as is used for Tone-1: the constricted phonation (4.2.1), identified with Catford's 'voiced creak'<sup>1</sup>. Such a tonal classification may seem quite confusing at first sight; but it is not so, as there are certain other features that help to keep Tone-3 verbs in their causative forms, distinguished from Tone-1 polysyllabic words, word-

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1. Catford (1964, p.32).



initial features being the most important of those: initial voice, vocalic articulation, friction, aspiration, laterality, etc. are some of the exponents (in all forms both causative and non-causative) of Tone-3, but not of Tone-1. The presence of such features is thus one of the decisive factors for the distinction of Tone-3 from Tone-1. It is true, that these word-initial features are also common to Tone-2 words, but other features like pitch and phonation sufficiently distinguish Tone-3 causatives from Tone-2.

It must be pointed out here that the position taken in this thesis regarding tonal classification of Tone-3 verb forms is different from that of Gill and Gleason, who treat certain verbs as being Tone-3 for their non-causative forms but Tone-1 in their causative forms, thereby giving priority to the pitch and phonation criteria over the word-initial criteria such as voice + plosion/affrication and aspiration + plosion/affrication, referred to above, both of which are non-Tone-1.

Gill and Gleason (1963, pp.121-24) discussing causatives state that, "verb stems may be inflected, or they may be extended to form causatives which are inflected. There are two types of causatives, simple and double .... In all types, the tone shifts to the extension, but remains the same, unless noted....."

(d) High tones become low in both causatives:

/l'éb-/	/l'éb <sub>na</sub> /
/ləbà-/	/ləbò <sub>na</sub> /
/ləbwà-/	/ləbwò <sub>na</sub> /."

The present treatment is different from that of Gill and Gleason in that the concepts "tone shift" and "tone change" are not resorted to in this thesis. Tone is a prosody stated for the whole word as a unit. All six of the above examples are treated as Tone-3 regardless of the alternation in pitch-features and phonation that led Gill and Gleason to introduce a change of tone for causative forms. In my analysis, it is stress, not tone, that alternates being stem-final in both the causative and non-causative verb forms, the stems being different. The difference in the pitch-exponency of Tone-3 in the causative verb forms is associated with a different placement of stress within the word: the stress is ultimate in disyllabic stems and penultimate in trisyllabic words, e.g., [ləbà] but [ləbòŋa]. It has been pointed out above that the different pitch-exponency in case of Tone-3 in causative verbs is also accompanied by the constricted phonation.

In the tonal classification given in this thesis, Tone-3 causatives fall into the same tone class as that of the non-causative Tone-3 verb forms. The tonal classification is not affected by the fact that pitch exponents, as also phonation features, are appreciably different in each case; the overriding consideration is that the characteristically Tone-3 syllable-initial features referred to in 4.3.3 remain the same ([kh, g] etc.), as for example:

TONE-3

	<u>NON-CAUSATIVE</u>	<u>CAUSATIVE</u>
(1)	[lɛ́b]	[lɛ̀bà]
(2)	[sɔ́d]	[sɛ̀dà]
(3)	[rín:]	[rɪ̀nà]
(4)	[gún:]	[gɪ̀nà]
(5)	[khó1]	[khulà]

(The word-initial features exemplified by (1)-(5) above do not occur in Tone-1 words. See 4.3.1 for the limited range of Tone-1 word-initial features).

Other variant pitch-features noted for Tone-3 verb forms may be presented as under:

Non-causative

- (i) With F-term (3.1.1) of the Intonation System a verb word like ríá in the clause-final position in a sentence-final clause has this pitch pattern: rise and fall in the first syllable followed by a low level pitch in the second syllable Λ—.
- (ii) A mid level pitch in the first syllable followed by a pitch rising from mid to high in the second syllable —/, is a pitch pattern noted for ríá in the clause-final position in a sentence-final clause under H.R.-term (3.1.2) of the Intonation System.
- (iii) A word like ríá in the clause-final position in a sentence-final clause spoken with H.Le.-type (3.1.3) of Intonation, has the following pitch pattern: a high



- level pitch in the first syllable followed by a high level pitch in the second syllable — —.
- (iv) A pitch rising from low to mid followed by a mid level pitch in the second syllable — / — is the pattern noted under M.Le. term (3.2.1) of the Intonation system set up for non-sentence-final clauses.
- (v) A high level of pitch in the first syllable followed by a mid level pitch in the second syllable — — is the pitch pattern noted for non-causative verb forms in non-sentence-final clauses with L.R. type (3.2.1) of Intonation.

#### Causative

For causative forms of verbs the following pitch patterns are noted:

- (i) A mid level pitch in the first syllable followed by a falling rising pitch in the second — \ / and
- (ii) a mid level pitch in the second and a rising pitch in the third syllable — \ / ; as in words like [ləbà] and [kəḍàya] respectively.

These pitch patterns can be presented in the form of Table 4.3 and 4.4:

Table 4.3

S.No.	Intonation Type	Pitch Patterns
1.	F	<u>△ — , — △ , — / \ , / \ —</u>
2.	H.R.	<u>— /</u>
3.	H.Le.	<u>— —</u>
4.	M.Le.	<u>— / —</u>
5.	L.R.	<u>— —</u>



For causative Tone-3 verb forms the pitch-patterns are as in:

Table 4.4

INTONATION TYPE	PITCH PATTERNS
F	<u>—v, —v</u>

4.2 PHONATION FEATURES: A two-term prosodic system can be set up for the various types of phonation as applicable to verb-words in Doabi. The two terms of the system are:

I Constricted (after constriction in the larynx, felt during the production of such words) and

II Non-constricted.

I CONSTRICTED: The characteristics of this type. are a "sepulchral"<sup>1</sup> voice, in the voiced part of the word pronounced with a lowering of the larynx usually accompanied by relatively low pitch. A considerable amount of constriction in the larynx is also felt (hence the name 'constricted'). Spectrograms made of words with such a type of phonation when compared with those obtained from J.C. Catford's recordings of series of phonation types show that this type corresponds well to his 'voiced creak'<sup>2</sup> (see Appendix IV A, especially exx.1,5 ). The effect of this phonation type is felt most of all on the stressed syllable in the word, but the unstressed syllable(s)

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1. Henry Sweet, A Handbook of Phonetics, 1877, pp.97-99.

2. J.C. Catford, Phonation Types, in In Honour of Daniel Jones, 1964, p.32.

in the word, if any, is not entirely without such effect. As can be seen from the spectrogram 5 of [kəṭaya] (Appendix IV-A), the whole word is affected by a constricted type. Long vowels in word-final position following nasals are not nasalized with this type of phonation.<sup>1</sup>

II NON-CONSTRICTED: The other type of phonation is non-constricted or clear. This corresponds to Catford's "voice" or "normal"<sup>2</sup> voice during the voiced part of the word. The most characteristic feature of this type is the total absence of a sensation of constriction in the larynx. Tone-3 verbs in their non-causative form are pronounced with a raising of the larynx usually accompanied by a relatively high pitch. In Tone-2 verb words upward/downward movement of the larynx is not noted.

4.2.1 Tone-1: The constricted type of phonation is an exponent of Tone-1 in verb words. These include both non-causative and causative verb words. In the case of a one-word affirmative verbal phrase (2.7.1.1) if the only verb word is that of Tone-1, the whole phrase has a constricted voice quality; in the case of other verbal phrases (two-word, three-word etc. 2.7), however, the remaining words have a non-constricted phonation. It is worth mentioning here that it is only the Main Verb sub-category that contains Tone-1 verb words (Appendix I), in the other two sub-categories, namely,

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1. See S.S. Joshi, "A phonetic and phonological study of the use of pitch and other associated features in Panjabi (Doabi)", 1970, p.99 (supported by Electro-aerometer readings p.156 ).

2. Op. cit., p.32

the Operator Verbs (Appendix II) and the Auxiliary Verbs (Appendix III), Tone-1 words are conspicuous by their absence.

4.2.2        Tone-2: A non-constricted phonation is an exponent of Tone-2 in verb words, non-causative and causative alike.

4.2.3        Tone-3: One of the phonetic exponents of Tone-3 in non-causative verb words is a non-constricted phonation. On the contrary, a constricted phonation characterizes Tone-3 causative verb words.

4.2.4        CRITERION: The constricted type of phonation can thus be used as a criterion to keep Tone-1 verbs (both non-causative and causative) and Tone-3 causative verbs distinct from other members of the Main Verb sub-category.

4.3            Word-initial features:

4.3.1        Tone-1: The phonetic exponents are:

(i) Voicelessness + non-aspiration (+plosion/affrication)  
[p, t, t̚, k, c] .

(ii) Nasality (+bilabiality/dentality) [m, n].

Examples:

(i)	[pər]	'fill'
	[tək]	'push'
	[t̚o]	'carry'
	[kəɾ]	'chisel'
	[caɾ]	'brush'
(ii)	[mədɔɭ]	'tumble'
	[na]	'have a bath'

A notable feature, however, is that (ii) is restricted to a very small number of verb words in the language. These are two of the examples of such words.

4.3.2 Tone-2: The phonetic exponents of Tone-2 verbs may be stated as:

- (i) Vocalic articulation [ɛ, a, ɔ, o, ə, u]<sup>1</sup>.
- (ii) Voicelessness + non-aspiration (+plosion/affrication) [p, t, t̥, k, c].
- (iii) Voicelessness + aspiration (+plosion/affrication) [ph, th, t̥h, kh, ch].
- (iv) Voicelessness + friction (+dentality/alveolo-palatality) [s, ʃ].
- (v) Voice + laterality [l].
- (vi) Nasality (+bilabiality/dentality) [m, n].
- (vii) Voice (+plosion/affrication) [b, d, d̥, g, j].
- (viii) Voice + trill + dentality [r].
- (ix) Voice + glottality + friction [h].

Examples:

(i)	[ɛ̃t̥h]	'be proud'	(ii)	[pũ]	'strain'
	[a]	'come'		[tũ]	'wālk'
	[ɔ̃]	'think of'		[t̥ok]	'stop'
	[od̃ə]	'be unhappy'		[k̃ə]	'do'
	[ə̃]	'resist'		[cĩ]	'saw'
	[ũ]	'fly'			

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1. In Appendix I and II for typographic reasons u=u and u:=u of our systematic transcription.



(iii)	[phuk]	'burn'
	[thap]	'establish'
	[t̥hók]	'hammer'
	[khəlar]	'spread'
	[chəḍ:]	'leave'
(iv)	[suṇ]	'listen'
	[šərma]	'be ashamed'
(v)	[ləd:] <sup>1</sup>	'load'
(vi)	[mar]	'kill'
	[nap]	'measure'
(vii)	[bol]	'speak'
	[dekh]	'look'
	[ḍob]	'sink'
	[gɪṇ]	'count'
	[jaṇ]	'know'
(viii)	[rok]	'stop'
(ix)	[har]	'weigh'

4.3.3 Tone-3: For Tone-3 verbs the following features may be stated as exponents:

- (i) Vocalic articulation + closeness + backness [u,u].
- (ii) Voicelessness + non-aspiration (+plosion/affrication)  
[p, t, t̥, k, c].
- (iii) Voicelessness + aspiration (+plosion/affrication)  
[ph, th, t̥h, kh, ch].

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1. A slight <sup>difference</sup> in pronunciation has been noted in <sup>the</sup> case of my wife. She pronounces words containing my Tone-2 lateral-initial lexical items with Tone-1.

	[gun]	'knead'
	[juj]	'fight'
(vii)	[ləba]	'help find'
(viii)	[rin]	'cook'
(ix)	[hũj]	'sweep'

#### 4.3.4 CRITERIA:

(1) The presence of the following word-initial features provides a criterion for distinguishing Tone-2 and Tone-3 verb forms from Tone-1 verb forms:

##### Non-Tone-1 features:

- (i) Vocalic articulation.
- (ii) Voice + laterality.
- (iii) Voice + plosion/affrication.
- (iv) Voice + trill + dentality.
- (v) Voicelessness + aspiration + plosion/affrication.
- (vi) Voicelessness + friction.
- (vii) Glottality + friction.

(2) Close-back vocalic articulation ([ u ] ) is an exponent of Tone-3 verb forms only and not of Tone-1 or Tone-2, thus it can also be used as a criterion for distinguishing Tone-3 from Tone-1 and Tone-2 verbal words.

(3) Half-open + front/back vocalic articulation [ ɛ, ɔ ], open vocalic articulation [ a ], central + short vocalic articulation [ ə ] and half-close + back vocalic articulation [ o ] are features of Tone-2 only. They can, therefore, be used as criteria to keep Tone-2 distinct from Tone-1 and Tone-3.

(4) Word-initial voicelessness + friction + alveolo-palatality ([ ʃ ] ) is a feature of Tone-2 verb words only (the list contains only two words). This may be used as a criterion for keeping Tone-2 verbal words as distinct from Tone-1 and Tone-3

- (iv) Voicelessness + friction [s]
- (v) Nasality (+bilabiality/dentality) [m, n]
- (vi) Voice + plosion/affrication [b, d, ɖ, g, j]
- (vii) Voice + laterality [l]
- (viii) Voice + trill + dentality [r]
- (ix) Voice + glottality + friction [h]

Examples:

- |       |          |                  |
|-------|----------|------------------|
| (i)   | [ubərna] | 'to jump'        |
|       | [ũŋgəɲa] | 'to feel sleepy' |
| (ii)  | [pi]     | 'grind'          |
|       | [tek]    | 'get frightened' |
|       | [toɭ]    | 'find out'       |
|       | [kəɖa]   | 'help draw'      |
|       | [cəɲa]   | 'help climb'     |
| (iii) | [phe]    | 'crush'          |
|       | [thuk]   | 'spit'           |
|       | [t̪her]  | 'wait'           |
|       | [khula]  | 'help open'      |
|       | [chu]    | 'touch'          |
| (iv)  | [sod]    | 'correct'        |
|       | [sũŋga]  | 'make smell'     |
| (v)   | [mid]    | 'crush'          |
|       | [nẽŋg]   | 'pass'           |
| (vi)  | [bəɖ]    | 'murder'         |
|       | [dɛl]    | 'be afraid'      |
|       | [ɖol]    | 'spill'          |

verbal words.

#### 4.4 Word-final features

4.4.1 Tone-1: The following word-final features may be stated as exponents of Tone-1:

- (i) Vocalic articulation [ẽ, a, ẽ, o, u].
- (ii) Non-aspiration + voicelessness + plosion [ṭ, k].
- (iii) Voicelessness + aspiration + plosion + velarity [kh].
- (iv) Voice (+plosion/affrication) [g, j].
- (v) Voicelessness + friction [s].
- (vi) Nasality [m, n].
- (vii) a) Voice + trill + alveolarity [r]  
b) Voice + flap + retroflexion<sup>1</sup> [ɽ]
- (viii) a) Voice + laterality + laminality [l]  
b) Voice + laterality + apicality + retroflexion [ɭ]

Examples:

(i)	[pẽ]	'soak'	(v)	[cəs:]	'massage'
	[ṭa]	'demolish'	(vi)	[cu m]	'swing'
	[kẽ]	'mix'		[pən:]	'break'
	[to]	'wash'	(vii)a)	[pər]	'fill'
	[tu]	'drag'	b)	[caɽ]	'brush'
(ii)	[poɽ]	'snatch'	(viii)a)	[kəl:]	'send'
	[tək:]	'push'	b)	[koɭ]	'dissolve'
(iii)	[pəkh]	'burn'			
(iv)	[pog]	'enjoy'			
	[pej]	'send'			

---

1. Retroflexion in Punjabi may be dental, pre-palatal or palatal, hence no mention of 'place of articulation'.



4.4.2 Tone-2: The exponents of Tone-2 may be stated as:

- (i) Vocalic articulation [i, e, ɛ, a, ɔ, o, u] <sup>1</sup>.
- (ii) Voicelessness + non-aspiration (+plosion/affrication) [p, t, t̚, k, c] .
- (iii) Voicelessness + aspiration (+plosion/affrication) [ph, th, t̪h, kh, ch] .
- (iv) Voice (+plosion/affrication) [b, d, d̪, g, j] .
- (v) a) Voice + laterality + laminality [l]  
b) Voice + laterality + apicality + retroflexion [ɭ]
- (vi) a) Voice + trill + alveolarity [r]  
b) Voice + flap + retroflexion<sup>2</sup> [ɾ]
- (vii) Nasality [m, n, ŋ]
- (viii) Voicelessness + friction [s]

Examples:

(i)	[pi]	'drink'	(iii)	[ləph]	'bend down'
	[de]	'give'		[cɪt:h]	'chew'
	[pɛ]	'lie down'		[bɛt̪h]	'sit'
	[la]	'stick'		[dekh]	'look'
	[ro]	'weep'		[puc:h]	'ask'
	[sɔ̃]	'sleep'			
	[su]	'deliver the baby'	(iv)	[dɔb]	'drown'
(ii)	[nap]	'measure'		[səd:]	'call'
	[sut]	'draw'		[chəɖ:]	'leave'
	[pət̪:]	'dig'		[mǎŋg]	'ask for'
	[rok]	'stop'		[bij]	'sow'
	[bec]	'sell'			

- 
1. As pointed out earlier (Chapter I p.15) vowels [i, e, ɛ, a, ɔ, o, u] are long as opposed to [ɪ, ə, u] which are short. So there is no need to mark them as such. Short vowels may occur with a short consonant or a long one, hence the need to mark length in consonants.
  2. For retroflexes no place of articulation can be mentioned, as they can be produced in the dental area as well, e.g. [t̪ɐɾ] 'melt' where [t̪] is also a retroflex.

- (v) a) [bol] 'speak'  
       b) [gal] 'melt'  
 (vi) a) [tor] 'start'  
       b) [mor] 'bring back'  
 (vii) [cum:] 'kiss'  
        [mən:] 'agree'  
        [sun] 'listen'  
 (viii) [bəs] 'settle'

4.4.3 Tone-3: The following word-final features may be stated as exponents of Tone-3<sup>for</sup> verbs in their non-causative form:

- (i) Vocalic articulation [i, e, ɛ, a, o, u]  
 (ii) Voicelessness + non-aspiration (+plosion/affrication)  
       [t̚, k̚, c̚]  
 (iii) Voice (+plosion/affrication) [b, d, ɖ, g, ɟ]  
 (iv) Nasality [n]  
 (v) Voice + flap + retroflexion [ɾ]  
 (vi) Voice + lateral (+laminality/apicality) [l, ɭ]

Examples:

- |              |           |              |                            |
|--------------|-----------|--------------|----------------------------|
| (i) [pi]     | 'grind'   | (iii) [sãmb] | 'look after'               |
| [phe]        | 'mash'    | [mid]        | 'crush'                    |
| [re]         | 'stay'    | [kəd]        | 'draw'                     |
| [ɖa]         | 'spread'  | [sũŋg]       | 'smell'                    |
| [kho]        | 'snatch'  | [bəj]        | 'get tied'                 |
| [chu]        | 'touch'   | (iv) [bən]   | 'tie'                      |
| (ii) [sɪt̚:] | 'throw'   | (v) [roɾ]    | 'throw/push down the hill' |
| [thuk:]      | 'spit'    | (vi) [khol]  | 'open'                     |
| [khɪc̚]      | 'attract' | [t̚ol]       | 'find out'                 |

4.4.4 CRITERIA: The following features may be used as criteria for keeping the different terms of the tonal system distinguished from one another:

(i) 1 and 2 versus 3

(x) The presence of the feature voicelessness + aspiration (+plosion/affrication) word-finally is a feature of Tone-1 and Tone-2 verb words only and not of Tone-3. It can thus be used as a criterion for keeping Tone-1 and Tone-2 verbs distinct from Tone-3 verbs.

(y) Voicelessness + friction in the word final position is a feature confined to Tone-1 and Tone-2 verb words only. It can, therefore, be used as a criterion for distinguishing Tone-1 and Tone-2 verb words from Tone-3.

(z) In the word final position, the feature voice + trill + alveolarity is a feature of Tone-1 and Tone-2 words only. This can also serve as a criterion for keeping Tone-1 and Tone-2 words distinguished from Tone-3 words.

(ii) 2 versus 1 and 3

(l) Nasality + retroflexion word-finally is a feature confined to Tone-2 verb words. This can be used as a criterion to keep Tone-2 words distinct from Tone-1 and Tone-3 words.

(m) The feature voicelessness + non-aspiration + plosion (+labiality/dentality) is a feature found in Tone-2 words only. It is not a feature of either Tone-1 words or Tone-3 words. We can use this as a criterion for keeping Tone-2 words distinct from Tone-1 and Tone-3 words.

(iii) 2 and 3 versus 1:

The presence of the feature voicelessness + non-aspiration

+ affrication is a feature of Tone-2 and Tone-3 words only.  
This can, therefore, be used as a criterion for distinguishing  
Tone-2 and Tone-3 words from Tone-1 words.



## CHAPTER V

### THE VERB: Syllable Initial

5.0            SYNTAGMATIC RELATIONS: What follows in this chapter is an attempt to discuss the syntagmatic relations that have been found to exist between various segments of the initial piece of the initial syllable of the Main Verb word in Punjabi. This, however, does not mean that other members of the verb sub-category, Operator and Auxiliary Verbs, have been ignored. As a matter of fact, the Operators are, without any exception, all homophonous with members of the Main Verb sub-category. Moreover, they are very limited in number; only twenty eight in all. So the statements made about the initial syllable of the Main Verb word (which is also initial in the verbal phrase provided that it is affirmative), also cover the Operator Verb. There is no doubt, that some big phonological gaps are there that are left in the case of Operator Verbs: Tone-1 verb words are conspicuous by their total absence from the list of Operator Verbs (see Appendix II). Therefore, if the initial piece of the initial syllable of Operator Verbs is considered separately, two different tonal systems would have to be set up, a three-term tonal system for the Main Verb sub-category and a two-term tonal system for the Operator Verb sub-category. The list of members of the Auxiliary Verb sub-category is even more limited. Nothing more would be added to the detail if the Auxiliary Verb sub-category were to be taken on its own; so, in the sections that

follow, a single Main/Operator/Auxiliary syllable initial system has been set up as regards the initial syllable. The statements made will, thus, also cover the other two sub-categories of verb, although examples have been taken mainly from the Main Verb sub-category.

5.1 OCCLUSION VERSUS NASALITY, LATERALITY, ETC.: In the initial syllable of a verb word in Punjabi, the initial consonant, where present, exhibits certain syntagmatic relationships with the vowel that immediately follows it. Thus, while (A) occlusion in the initial consonant is linked to (1) voice, or (2) partial-voicelessness combined with high volume velocity air-flow<sup>1</sup> in the following vowel, (B) features other than occlusion are linked to voice in the vowel that follows such a consonant immediately, e.g.,

(A)	(i)	[paɾ]	'tear'	(B)	(i)	[moɾ]	'turn'
	(ii)	[bec]	'sell'		(ii)	[likh]	'write'
	(iii)	[phəɾ]	'hold'		(iii)	[rok]	'stop'
					(iv)	[suɳ]	'listen'

It can be seen in the examples given at (A) above that in (i) the occlusive (voiceless, non-aspirated) [p] is followed by a fully voiced vowel [a], in (ii) the occlusive (voiced) [b] is also followed by a fully voiced vowel [e], whereas in (iii) the (voiceless, aspirated) occlusive [p] is followed by partial-voicelessness combined with high volume velocity air-flow in the vowel ([ə]). On the other hand, we find that

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1. J.C. Catford, Fundamental Problems in Phonetics, 1977, p.95.

in all the examples under (B) the non-occlusives - (i) nasal, (ii) lateral, (iii) trill, (iv) fricative - are all followed by a fully voiced vowel. Thus it becomes clear that initial occlusion is associated with either (1) voice or (2) partial voicelessness combined with high volume velocity air-flow in the following vowel, and that initial features other than occlusion - nasality, laterality, trill, friction - are linked with full voice in the vowel that follows such a feature in the initial consonant of a verb word.

5.2            INITIAL SYSTEM: It becomes clear from the foregoing discussion that the initial consonant of the initial syllable, where present, is syntagmatically related to the vowel that follows immediately. To account for the syntagmatic association of occlusion in the consonant with voice or partial voicelessness combined with high volume velocity of air-flow in the vowel, and features other than occlusion in the consonant with full voice in the vowel, a two-term system can be set up for the syllable initial piece, defined as initial consonant and vowel (as opposed to syllable final piece, defined as vowel or as vowel and consonant), of the initial syllable in a polysyllabic verb word (hence the only syllable in a monosyllabic verb word). This system is named Initial System here, since it is related to the word initial. The two terms of the prosodic system are: p (from plosion, which includes affrication also) and  $\bar{p}$  (non-p). It should be pointed out here that the name 'p' is chosen because it is a reminder of plosion and its syntagmatically related features,

not of plosion alone, and  $\bar{p}$ , similarly, from a relationship that comprises full voice in the vowel combined with some feature other than plosion in the consonant.

The phonetic exponents of the two terms of the prosodic system are given in (5.2.1) and (5.2.2) below:

PHONETIC EXPONENTS OF P AND  $\bar{P}$

5.2.1       $p$ :

S.No.	Description of phonetic Exponents		Examples
	Consonant	Vowel	
1.	occ.	partial-vcless.	[phu(k) <sup>4</sup> , tha(p), ṭho(k), ḳhó(1) <sup>2</sup> , cha(ṇ)]
2.	occ.	voice	[po(c), to(ṛ), ṭo(k), ku(k), c̣u(m)]
3.	occ.	voice	[be(c), ḍo(ṛ), ḍo(b), g̣i(ṇ), jo(ṛ)]

English Translation:

- (1) burn, establish, pat, open, sift
- (2) plaster, start, interrupt, cry, swing
- (3) sell, run, sink, count, combine

---

1. The less significant part of the piece has been enclosed in round brackets.

2. A pitch mark here summarizes the whole range of possible pitches:

- (i) [ ' ] [ / / ^ ]
- (ii) [ \ ] [ v / \ ]
- (iii) [ ] [ - / \ ]



5.2.2 p̄:

S.No.	Description of phonetic Exponents		Examples
	Consonant	Vowel	
1.	nas.	} voice	[mar, nap]
2.	lat.		[la ]
3.	trill		[rok]
4.	friction		[sõ, ˇsərma]
5.	(glott.)+friction		[həɾ]

English translation:

- (1) kill, measure
- (2) stick
- (3) stop
- (4) sleep, feel shy
- (5) get away

Sub-systems for the p-Initial piece: h - h̄ and v - v̄

From the phonetic exponents of p stated above (5.2.1), it becomes clear that there is a type of p-Initial in which the partial - voicelessness combined with high-volume velocity in the vowel is linked to voicelessness in the initial consonant; e.g. [phu(k)] . The other two types of p-Initial, however, exhibit something entirely different: in such syllables, full voice in the vowel is linked to either voice or voicelessness in the initial consonant, as in [be(c), po(c)] respectively.

This syntagmatic relationship in the vowel and consonant segments as noted above, can be dealt with if a further two-term h - h̄ prosodic system is set up as a sub-system for the p-term of the Initial system.

The phonetic exponents of  $h^1$  (5.2.1.1) and  $\bar{h}$  (non-h) (5.2.1.2) are stated as under: 5.2.1.1 h:

S.No.	Description of Phonetic Exponents		Examples
	Consonant	Vowel	
(1)	vcless. <sup>2</sup>	partial-vcless.	[phu(k), tha(p), ṭho(k), kho'(l), cha(ṇ)]

5.2.1.2  $\bar{h}$ :

S.No.	Description of Phonetic Exponents		Examples
	Consonant	Vowel	
(1)	vcless.	voice	[po(c), to(r), ṭo(k), ku(k), cù(m)]
(2)	voice		[be(c), dɔ(ṛ), ḍo(b), gi(ṇ), jo(ṛ)]

1. Catford refers to, "The high-velocity flow at rates around 1000 cm<sup>3</sup>/s, common in English initial [h-], or in the 'aspirated' h-like release of stressed initial voiceless [p<sup>h</sup>-, t<sup>h</sup>-, kh-], .....", (1977, p.95). I expect the Punjabi figures to be at least as high or even higher because in Punjabi we have to make a lexical distinction between the aspirated and the non-aspirated initial occlusives.

2. The following abbreviation is being used:  
vcless.: voicelessness

v -  $\bar{v}$  sub-system

Another point to be noted in connection with the statement of phonetic exponents of p (5.2.1) is that there is a type of p-Initial in which voice in the consonant is linked to full voice in a vowel that follows immediately; e.g. [be(c)]. This may, however, be contrasted with the remaining type of p-Initial wherein voicelessness in an initial consonant occurs with either (i) full voice or (ii) partial voicelessness combined with high-volume velocity, in a following vowel as alternative features; e.g. [t̥o(k)][t̥ho(k)].

To account for this syntagmatic relationship between initial consonant and a following vowel, a further two-term prosodic system v versus  $\bar{v}$  is set up here as a sub-system for the p-term of the Initial-system. The two terms of the sub-system are named here as v (from voice, voice being the characteristic feature of the consonant and the vowel in this type of syllable) and  $\bar{v}$  (non-v).

The phonetic exponents of v (5.2.1.3) and  $\bar{v}$  (5.2.1.4) are stated as under:

5.2.1.3     v:

S.No.	Description of Phonetic Exponents		Examples
	Consonant	Vowel	
(1)	voice	voice	[be(c), ḍo(ṛ), ḍo(b), g̣ɪ(ṇ), jo(ṛ)]

5.2.1.4 v̄:

S.No.	Description of Phonetic Exponents		Examples
	Consonant	Vowel	
(1)	vcless.	voice	[po(c), to(r), t̄o(k), ku(k), cū(m)]
(2)		partial-vcless.	[phu(k), tha(p), t̄ho(k), kh̄(1), cha(n̄)]

5.2.1.5 Relationship between h - h̄ and v - v̄ systems: Of the two prosodic sub-systems stated above for the p-term of the Initial System, three combinations are possible. These possible combinations are:

(i) h̄ v̄, (ii) h̄ v, and (iii) h v̄. The position becomes quite clear from the table given below:

S.No.	Type of Combination	Examples
(1)	h̄ v̄	[pu(r), tu(r̄), t̄e(k), ke(r), ci(r̄)]
(2)	h̄ v	[bi(j), de(kh), d̄e(g), ge(r̄), jo(kh)]
(3)	h v̄	[ph̄e(r̄), tho(p), t̄ha(r), kha(r), che(r̄)]

English translation: (1) fill, stuff, put, spread, saw

(2) sow, see, fell, turn, weigh

(3) hold, stick, cool, dissolve, tease



An important point to be noted here is that when a lexical item is classified as h-Initial(-piece) (on the basis of the prosodic sub-systems set up above) it must be  $\bar{v}$  as well. In the same way a lexical item classified as v-Initial(-piece) must be  $\bar{h}$  as well. Thus, for the sake of economy, an  $h\bar{v}$  lexical item could be represented, in a phonological formula, as  $h$ ; an  $\bar{h}v$  lexical item, in the same way, could therefore be formularized as  $v$ . The third type, however, will have to be represented phonologically as  $\bar{h}\bar{v}$ .

5.3            ALTERNATIVE TREATMENT: It must be pointed out here that a broad syntagmatic distinction could be made between the type of syllable initial in which there is partial voicelessness of vowel (and high volume-velocity of the air-flow), linked to occlusion and voicelessness in the initial consonant, versus the type of initial in which the vowel is fully voiced, and linked to occlusion (with voice or voicelessness), nasality, laterality, and friction. The former corresponds to the  $p\ h(\bar{v})$  type, and the latter to  $p\bar{h}\ (v - \bar{v})$  and  $\bar{p}$  types. As an alternative treatment, one might like to set up a two-term prosodic system for the word-initial consonant and vowel relationships. The two terms of the prosodic system thus set up for the initial piece of the initial syllable could be named  $h$  (from aspiration, this being the characteristic feature of such syllables) and (non- $h$ )  $\bar{h}$ . If we were to adopt such an analysis, the phonetic exponents of  $h$  (5.3.1) and  $\bar{h}$  (5.3.2) could be stated as follows:

5.3.1      h:

S.No.	Description of Phonetic Exponents		Examples
	Consonant	Vowel	
(1)	plos. <sup>1</sup> + vcless.	partial-vcless.	[phu(k), tha(p), ṭho(k), ḳhó(l), cha(ṇ)]

5.3.2      h̄:

S.No.	Description of Phonetic Exponents		Examples
	Consonant	Vowel	
(1)	plos.+vcless.	voice	[po(c), to(r), ṭo(k), ku(k), c̣u(m)]
(2)	plos.+voice		[be(c), ḍo(ṛ), ḍo(b), g̣i(ṇ), j̣o(ṛ)]
(3)	nas.(+voice)		[ma(r), na(p)]
(4)	lat.(+voice)		[la]
(5)	trill(+voice)		[ro(k)]
(6)	fric.(+vcless.)		[ṣõ, ṣ̌ə(rma)]
(7)	fric.(+voice)		[ḥə(ṭ)]

1. plos.: plosion, nas.: nasality, lat.: laterality,  
fric.: friction, glott.: glottality.

In this thesis, however, such a treatment is not adopted. If we were to adopt it, it would obscure the very important feature that it is not any type of consonant in the syllable initial position in which (i) voice or (ii) voicelessness is syntagmatically related to (i) voice or (ii) partial voicelessness (and a high volume-velocity of the air-flow) in a following vowel. The fact is that it is only for the plosives and affricates that such a link is found. Therefore, this treatment has been discarded in favour of the  $p\text{-}\bar{p}$  prosodic system set up above for the syllable-initial of the initial syllable in verb words. The major contrast is between occlusive syllable-initial versus non-occlusive syllable-initial. The major point of difference between the two types of syllable-initial lexical items is that in the latter (non-occlusive syllable-initial) the vowel is always fully voiced, regardless of whether the consonant is voiced or voiceless. In the former type of lexical item, however, the vowel may be (i) either partially-voiced or (ii) fully voiced. The syntagmatic relationship can be established between these alternative features of the vowel and occlusion in the initial consonant.

It must be pointed out that this  $p\text{-versus-}\bar{p}$  statement made here for the syllable-initial piece of the initial syllable in verb words receives support from the tonal analysis (Chapter IV): Tone-1 examples are all but limited to word-initial occlusion, and therefore to the  $p$ -type of piece, and more specifically, to the  $\bar{h}\bar{v}$  type of  $p$ -piece.

Since I became aware of such a treatment applied to a related North Indian language: Hāṛautī, it is worthwhile to point out here that Allen in 'Aspiration in the Hāṛautī Nominal'<sup>1</sup> (especially pp. 71-81) in the 'Initial' position associates his prosodic term 'h' with l, n, and m as well as with k, c, t, t, and p, ignoring the syntagmatic claim of occlusion (in k, c, t, t, and p) to be treated separately from sonorance in l, n, and m:

[k, c, t, t, p]

[kh, ch, th, th, ph]

[g, j, d, d, b]

[l, n, m]

[gh, jh, dh, dh, bh]

[lh, nh, mh];

and, further associating [h-] with [kh, ch, th, th, ph] resulting in a six-term phonematic system for his 'h words' (in 'Focal position') as opposed to the five-term system for 'h words':

'h words: Focal: k c t t p # (six terms)

'h words: Focal: k c t t p (five terms)

By treating [h-] in this way he destroys the balance that gives us the opportunity of setting up a single (five-term) system for our h and h, and v and v, Initials alike (5.5.1).  
5.4 Another type of relationship, that which exists between certain features of the initial consonant and the various degrees of aperture in the following vowel, should also find a mention here. At the very first sight such a relationship

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1. W.S. Allen, 'Aspiration in the Hāṛautī Nominal', Studies in Linguistic Analysis (ed. W.S. Allen), (Blackwell, Oxford), 1957, pp.68-86.



may look syntagmatic and thus need separate prosodic statement. In this thesis, however, it is not treated as a syntagmatic relationship but only a chance relationship.

In the dialect of Punjabi under discussion in this thesis, Doabi, it so happens that plosion when combined with voicelessness and aspiration as a combination of features for the initial consonant occurs together with only an eight-fold vowel quality range: [e, ε, a, o, u, ɪ, ə, ʊ], e.g.

[cheɾ, tʰeɾ, thap, tʰor, tʰũŋ, phɪr, phəɾ, khur].

These lexical items have already been classified as examples of the h-term of the h- $\bar{h}$  sub-system stated for the p-term of the two-term prosodic system set up for the syllable initial piece of the initial syllable on syntagmatic grounds. (It has been noted above that when a lexical item is classified as h, it must be  $\bar{v}$  as well).

Plosion when combined with voicelessness and non-aspiration ([p t t̚ k c]) as a word-initial combination of features occurs together with the full ten-fold vowel quality range:

[ɪ, e, ε, a, ɔ, o, u, ɪ, ə, ʊ], e.g.

[pi, ker, pɛ, pa, p̚ŋk, p̚ɔr, pur, kɪr, p̚ər, tur].

These are also examples of the  $\bar{h}$  and the  $\bar{v}$  terms of the two sub-systems stated for the p-term of the prosodic system set up for the syllable initial piece of the initial syllable in verb words in Punjabi.

Voice when combined with plosion and labiality [b] as a combination of features of initial consonant can be related to the maximum ten-fold vowel range, e.g.

[biɟ, bec, bæɬ, baɪ, b̚ɔɾ, bol, buth(ə), bɪcər, bək, bũɳ].

English translation: sow, sell, sit, burn, help, speak, fill, roam, say, weave.

On the other hand, the possible ranges of vowel quality that can occur with a combination of features like plosion combined <sup>with</sup> voice and some other features like, dentality, retroflexion, velarity, affrication in the initial consonant are different in each case as exemplified below. The gaps, that are there, are only fortuitous and have no systemic significance.

- (i) [dekh, dag, dər, dɪs, dərər, dutkar ] (six-fold)  
'look, mark, run, be visible, grind, maltreat.'
- (ii) [dəg, də́, də́, dɒb, dɪg, dər, dʊb:(ə)]  
'fell, become, spread, sink, fall, be afraid, drown.'  
(seven-fold)
- (iii) [geɾ, gaɭ, goɖ, gũnj, gɪɳ, gə́ɳɖ, gũnd ]  
'make run, melt, hoe, echo, count, mend, plait.'  
(seven-fold)
- (iv) [ji, jé, jag, jot, júj, jɪt:, jəɾ, juɾ]  
'live, copulate, awake, yoke, fight, win, fix, stick.'  
(eight-fold)

These are also examples of the v-term of the v- $\bar{v}$  sub-system stated for the p-term of the Initial System.

For the initial features other than plosion, such as, nasality, laterality, dentality and trill, dentality and friction, alveolo-palatality and friction, and glottality and friction, there are different possibilities of vowel-quality range that are related to them. They vary from a nine-fold range being related to [m] and a maximum of ten-fold to [s] to a two-fold range for [ʃ]. The gaps are, however, accidental. The data

has been limited to the verb words only in order to remain within the limits of the scope of the thesis. In other categories of words, such as nouns, these gaps are not there. Examples of a set of chance relationships referred to above are being cited as under, in the following order:

- (1) Nasality [m, n], (2) Laterality [l], (3) Trill [r],  
 (4) Friction + Voicelessness [s, š], (5) Friction + Voice [h]
- (1) [m]: [miṭ, meḷ, mék, mar, moṛ, mut, miṇ, mēr, muṛ]  
       [n]: [nà, nitar, nəkher]
- (2) [l]: [leṭ, léra, la, loc, lú, lišək, lətar, luk]
- (3) [r]: [ríj, ret, ré, rá, rok, rín, rəgər, ruḷ]
- (4) [s]: [sĩ, sek, sém, saṛ, soc, sō, sut, siṇək, səmeṭ, suṇ]  
       [š]: [šuk, šərma]
- (5) [h]: [habər, ho, hūng, hıcək, həluṇ, hub:ə]

English Translation:

- (1) 'close, compare, smell, kill, turn, pass<sup>water</sup>, measure, die, turn.'  
       'bathe, filter, distinguish.'
- (2) 'lie, furl, stick, long for, burn, shine, trample, hide.'
- (3) 'fancy, file, stay, sharpen, stop, cook, rub, be neglected.'
- (4) 'sew, heat, be afraid, burn, think, sleep, drag, blow, collect, hear.'  
       'whistle, be ashamed.'
- (5) 'pounce, become, moan, waver, shake, be proud of.'

The examples given above show that closeness and frontness as a combination of vowel features ([i]) does not combine with

word initial aspiration (which is a feature of voiceless plosive consonants only); the same is also true in case of half-openness and backness as a combination of vowel features ( [ɔ] ).

The types of relationship, referred to above, which are found to exist between different ranges of vowel quality and such syllable-initial features as occlusion versus non-aspiration etc., are not prosodically relevant, being a matter of chance. Consequently, no further prosodic systems are needed.

Incidentally, in Hindko as reported by Awan (1974, p.59) the possible range of vowel quality for the following vowel of the initial syllable where the syllable initial consonant contains the feature of plosion combined with aspiration is seven-fold: [ e, o, ɛ, a, ɪ, ə ] ; with occlusion not combined with aspiration, and also with features other than occlusion in the initial consonant of the initial syllable, the range of vowel quality is full nine-fold: [i, e, ɛ, a, o, u, ɪ, ə, ʊ].

It is noteworthy here that in Hindko, half-openness combined with backness ( [ɔ] ) is not a distinctive feature for the vowels, whereas in Doabi it is. But as we can see above, in Hindko, closeness combined with frontness ([ i ]) and also closeness combined with backness ( [u] ) in the vowel cannot be associated with plosion combined with aspiration in the initial consonant. In Doabi, however, it is only the feature of closeness combined with frontness ( [i] ) apart



from the feature of half-openness combined with backness ([ɔ]) that does not occur together with occlusion combined with aspiration in the initial consonant of initial syllable in verb words.

This phenomenon can be mentioned here, since it is a feature that helps to keep the two dialects separate from each other at the phonetic level of analysis.

5.5            PHONEMATIC C-SYSTEMS (Syllable Initial C-): Since the syllable-initial-consonant features of the p-initial lexical items and  $\bar{p}$ -initial lexical items cannot be subjected to any further prosodic analysis, the remaining differences are stated as the phonetic exponents of the Phonematic Units. For the syllable-initial piece of the initial syllable two Phonematic Systems are set up: one C-system for the p-initial type of lexical item and a different C-system for the  $\bar{p}$ -initial lexical item.

A five-term C-system has been set up for different types of verb belonging to the  $\bar{p}$ -initial type of lexical item (5.5.1). A seven-term phonematic C-system is, however, sufficient to account for the different types of verb that belong to the  $\bar{p}$ -initial type of lexical item (5.5.2).

5.5.1            PHONEMATIC C-SYSTEM for  $p(h, v, \bar{h} \bar{v})$ <sup>1</sup>: The five terms of the phonematic system and their phonetic exponents are as follows:

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1. Cf. Allen op.cit. p.74.

S. No.	Phonematic Unit	Phonetic Exponents	Prosodic Group	Phonetic Symbol	Examples
1.	P	lab <sup>1</sup> .+plos.	$\bar{v} \bar{h}$	[p]	[paɾ] 'tear'
2.			h	[ph]	[phəɾ] 'hold'
3.			v	[b]	[bol] 'speak'
4.	T	dent.+lam. +plos.	$\bar{v} \bar{h}$	[t]	[təɾ] 'swim'
5.			h	[th]	[thap] 'establish'
6.			v	[d]	[dekh] 'see'
7.	Ṭ	post-alv.+apic.+ ret.+plos.	$\bar{v} \bar{h}$	[ṭ]	[ṭal] 'put off'
8.			h	[ṭh]	[ṭhoḳ] 'pat'
9.			v	[ḍ]	[ḍeg] 'fell'
10.	K	vel.+dors.+ plos.	$\bar{v} \bar{h}$	[k]	[kəɾ] 'do'
11.			h	[kh]	[kha] 'eat'
12.			v	[g]	[gɪṇ] 'count'
13.	C	pal.-alv.+dors. +affrict.	$\bar{v} \bar{h}$	[c]	[cir] 'saw'
14.			h	[ch]	[cheɾ] 'tease'
15.			v	[j]	[jag] 'wake up'

It will be clear from the table above that examples 1, 4, 7, 10, 13 belong to the  $p \bar{h} \bar{v}$  piece, 2, 5, 8, 11, 14 belong to ph type and 3, 6, 9, 12, 15 belong to the prosodic piece pv; but a single C-system can stand for all three.

- 
1. The following abbreviations have been used in this table:  
 lab.: labiality, dent.: dentality, lam.: laminality, post-alv.: post-alveolarity, apic.: apicality, ret.: retrofléxion, vel.: velarity, dors: dorsality, pal-alv.: palato-alveolarity, affrict.: affrication.

5.5.2 PHONEMATIC C-SYSTEM FOR  $\bar{p}$  (word-initial piece): A seven-term phonematic C-system has been set up for verbs classifiable as  $\bar{p}$ ; the seven terms of the system and their phonetic exponents are:

S. No.	Phonematic Unit	Phonetic Exponents	Phonetic symbol	Examples	
1.	L	lat.+dent.+voice <sup>1</sup>	[l]	[ləɾ]	'fight'
2.	M	nas.+lab.+voice	[m]	[mar]	'kill'
3.	N	nas.+dent.+voice	[n]	[nap]	'measure'
4.	R	trill+alv.+voice	[r]	[rok]	'stop'
5.	S	frict.+dent.+vcless.	[s]	[saɾ]	'burn'
6.	Š	frict.+post-alv.+ret.+vcless.	[š]	[šərma]	'feel shy'
7.	H	frict.+glott.+voice	[h]	[həs:]	'laugh'

---

1. In addition to those mentioned on p.111 (f.n.1) the following abbreviations have been used in this table:  
 lat.: laterality, nas.: nasality, alv.: alveolarity,  
 frict.: friction, vcless.: voicelessness, glott.: glottality

## CHAPTER VI

### VERB ROOT FINAL

6.0            INTRODUCTION: The phonological characteristics of the syllable-final piece of the root-final will be discussed in this chapter. Six different major types can be established on the basis of the syntagmatic association of features peculiar to each type. In one type of the syllable-final piece of a root-final syllable, defined as the piece containing the vowel and the final consonant (6.1.1) (which may be followed by a central short vowel [ə]), plosion/affrication is one of the characteristic features. In such a case, aspiration and non-aspiration can be combined with the final consonant. In a second type (6.1.2) where one of the characteristic features of the final consonant is continuance, there is no question of associating aspiration and non-aspiration with the final consonant; however this second type has in common with the first type the fact that length in the vowel is associated with shortness in the following consonant ([ret, jag, dekh(ə), bol, cūm, kos]), and that, in contrast with this, shortness in the vowel is associated with alternative possibilities in the final consonant either shortness ([likh, chip, ruk, luk, cəl, phəs]) or length ([dub:ə, kət:ə, sɪk:hə, hɪl:ə, həs:ə]), (in this latter association length in the consonant is further associated with a following short central vowel [ə]). Thirdly, (6.1.3) shortness in the final





with a cluster containing homorganic nasal and plosive/affricate, e.g., [kẽmb, rẽnd]. Such a piece is here termed *k*, a reminder of the initial sound in cluster. A fifth major type (6.1.5), however, exhibits another kind of syntagmatic relationship: shortness in the final consonant is linked with shortness and centrality in the preceding vowel, e.g., [rəgəɾ, khəɾək]; moreover, in this type of piece the stem is always polysyllabic, in contrast with the possibility of monosyllabic stems in the others mentioned above. In the sixth major type (6.1.6), there is no post-vocalic consonant that can be associated with the vowel: the syllable is open, and the syllable-final piece in such a case contains a vowel only, which combines with the feature length and with any of these peripheral vowel qualities: closeness and frontness/backness, half-closeness and frontness/backness, half-openness and frontness/backness, and openness, e.g., [ji, tũ, de, ro, lɛ, sũ, pa]. Further, this vowel is syntagmatically associated with nasality and plosion ([nd]) in Intraverbal Junction with the Present Participle lexical item [da/nda] (see chapter VII), as opposed to the plosion feature ([d]) that is characteristic of the other five types of syllable-final piece in this type of Junction.

6.1 FINAL SYSTEM: To deal with the major characteristic features of the syllable-final piece of the root-final syllable referred to above, a six-term prosodic system has been set up here. The system has been named FINAL SYSTEM, since it deals with the syllable-final of the root-final syllable. The six terms of the system are:

- (i) p (from plosion, affrication is also included) (6.1.1)
- (ii) c (from continuance, this being a prominent feature in this type) (6.1.2)
- (iii) f (from flap, although it so happens that the apical trill, which is included, is not a flap) (6.1.3)
- (iv) k' (from the initial sound of cluster, of a homorganic nasal and a plosive/affricate) (6.1.4)
- (v) ə (after [ə] , a central short vowel being the only vowel in this type) (6.1.5) and
- (vi) o (after openness of the syllable) (6.1.6).

The phonetic exponents of the six terms of the prosodic system are stated as under:

Vowel	Consonant	Examples
short. + cent./ centraliz.	occ. + voice + short.	[bæg] [səj] [nɪb]
"	" + vcless. + "	[chip] [mɪt] [lʊk] [mæc]
"	" + " + " + asp.	[læph] [lɪkh]

English Translation: flow, adorn, be executed,  
hide, be blotted out, hide, burn,  
bend, write.



6.1.1

p

## Phonetic Exponents

## Examples

## S.No.

Vowel	Consonant	Vowel		
short. + central/ central- ized	occ.+voice+length	cent.+voice+ short.	[dʊb:ə]	1
			[səd:ə]	2
			[gəd:ə]	3
			[ləg:ə]	4
			[bəj:ə]	5
"	occ.+vcless.+length	"	[təp:ə]	6
			[kət:ə]	7
			[kʊt:ə]	8
			[cʊk:ə]	9
			[nəc:ə]	10
"	occ.+vcless.+length +asp.	"	[dəp:hə] <sup>1</sup>	11
			[cɪt:hə]	12
			[ʊt:hə]	13
			[sɪk:hə]	14
			[pʊc:hə]	15
length + peri- pheral	occ.+vcless.+short.	—	[nap]	16
			[ret]	17
			[let]	18
			[sek]	19
			[bec]	20

1. The presence of central short vowel finally is optional in S.No.11-15 and 26-28.

## p (continued)

Phonetic Exponents		Examples		S.No.
Vowel	Consonant	Vowel		
length + peri- pheral	occ.+voice+short.	—	[ɖob]	21
			[sód]	22
			[god]	23
			[jag]	24
			[bij]	25
"	occ.+vcless.+ short+ asp.	centr.+voice+ short.	[buthə]	26
			[beṭhə]	27
			[dekhə]	28

## English Translation:

- |            |                      |
|------------|----------------------|
| 1. drown   | 15. ask              |
| 2. call    | 16. measure          |
| 3. fix     | 17. file             |
| 4. join    | 18. lie down         |
| 5. strike  | 19. warm             |
| 6. cross   | 20. sell             |
| 7. spin    | 21. sink             |
| 8. grind   | 22. correct          |
| 9. lift    | 23. hoe              |
| 10. dance  | 24. wake             |
| 11. drink  | 25. sow              |
| 12. chew   | 26. fill to the brim |
| 13. get up | 27. sit down         |
| 14. learn  | 28. see              |

6.1.2

c

Phonetic Exponents		Examples		S.No.
Vowel	Consonant	Vowel		
length	lat.+short.	—	[bɒl]	1.
length	frict.+dent.+short.	—	[kɒs]	2.
short.	lat.+short.	—	[cəl]	3.
short.	frict.+dent.+short.	—	[phəs]	4.
short.	lat.+length	cent.+voice+short	[hɪl:ə]	5.
short.	frict.+dent.+short.	cent.+voice+short	[həs:ə]	6.
length+nas.	lab.+nas.+short.	—	[cũm]	7.
length+nas.	dent.+nas.+short.	—	[tãn]	8.
short.+nas.	lab.+nas.+length	cent.+voice+short	[cũm:ə]	9.
short+nas.	dent.+nas.+length	cent.+voice+short	[mõn:ə]	10.

English Translation:

- |                 |           |
|-----------------|-----------|
| 1. speak        | 6. laugh  |
| 2. curse        | 7. swing  |
| 3. walk         | 8. spread |
| 4. be entangled | 9. kiss   |
| 5. move         | 10. agree |

It is worthy of note here that the distinction made between the p type of piece and the c type of piece is reinforced by the fact that plosion and affrication in the final consonant, unlike the various features, including friction, that have been here grouped as 'continuant', is further associated with an alternation in the final (central) vowel of a sub-type of p-piece between aspiration ([Phə]) and non-aspiration

([-Pə]), while the corresponding central vowel in the c-piece is invariably fully voiced ([-Cə]); e.g. (p-piece) [hɪl:ə, həs:ə].

Further support for distinguishing the p-piece and the c-piece comes from the fact that in the c-piece the piece-final (central) vowel is associated with length in the preceding consonant, and therefore with shortness in the vowel (and appropriate-peripheral-qualities), while that final vowel is associated in the p-piece, with either length of consonant and shortness of vowel or with shortness of consonant (and aspiration) and length of vowel, e.g.,

exx.

[hɪl:ə, həs:ə]

[-VC:ə]

exx.

[ɖub:ə, sɪk:h(ə)]

[dekh(ə), beɰh(ə)]

6.1.3      f

Phonetic Exponents		Examples	S.No.
Vowel	Consonant		
length	ret.+lat.+short.	[meɭ]	1.
"	trill+alv.+short.	[car]	2.
"	flap+ret.+short.	[paɾ]	3.
" + nas.	nas.+ret.+short.	[jãɳ]	4.
short.	ret.+lat.+short.	[məɭ]	5.
"	trill+alv.+short.	[cər]	6.
"	flap+ret.+short.	[muɾ]	7.
" + nas.	nas.+ret.+short.	[bẽɳ]	8.



English Translation:

1. unite

2. graze

3. tear

4. know
5. smear

6. eat

7. turn

8. become

6.1.4      k

Phonetic Exponents			Examples	S.No.
Vowel	Consonant	Consonant		
short.+nas.	nas.+short.	occ.+short.	[kẽmb]	1.
" "	" "	" "	[rẽnd]	2.
" "	" "	" "	[cẽɳɖ]	3.
" "	" "	" "	[tẽŋg]	4.
" "	" "	" "	[pĩɳj]	5.

English Translation:

1. shiver

2. scrape

5. card
3. sharpen

4. hang

6.1.5 e

## Phonetic Exponents

Vowel	Consonant	Examples	S.No.
cent.+short+voice	short.	[tək:ər]	1.
		[copər]	2.
		[bədəl]	3.
		[nɪgəl]	4.
		[ʃərəm]	5.
		[tərəs]	6.
		[kələp]	7.
		[bəɾət]	8.
		[vɫət]	9.
		[khərək]	10.
		[khurəc]	11.
		[təɾəph]	12.
		[pərəkʰ]	13.
		[séməj]	14.

## English Translation:

- |               |                 |
|---------------|-----------------|
| 1. meet       | 8. use          |
| 2. smear      | 9. topple over  |
| 3. change     | 10. ring        |
| 4. swallow    | 11. scrape      |
| 5. be ashamed | 12. feel uneasy |
| 6. long for   | 13. test        |
| 7. wail       | 14. understand  |

6.1.6

o

Phonetic Exponents	Examples	S.No.
Vowel		
length + appropriate (peripheral) qualities	[ji]	1.
	[de]	2.
	[pɛ]	3.
	[pa]	4.
	[sõ]	5.
	[co]	6.
	[tù]	7.

English Translation:

- |             |           |
|-------------|-----------|
| 1. live     | 4. put in |
| 2. give     | 5. sleep  |
| 3. lie down | 6. milk   |
| 7. drag     |           |

6.2 QUANTITY SYSTEM (l-s): It can be seen from the phonetic exponents of p (6.1.1) and c (6.1.2) above that in one type of p-lexical item length in a final consonant is syntagmatically associated with shortness in a preceding vowel and with a following central vowel. On the other hand, there is another type of p-lexical item in which shortness in the final consonant is linked with length in a preceding vowel. In the c-lexical item, however, whereas there is a

similar kind of syntagmatic association of the feature of length in a final consonant with shortness in a preceding vowel and with a following central short vowel; another kind of syntagmatic relationship is also found, viz, shortness/length in the preceding vowel syntagmatically associated with shortness in the following consonant. Presented in the form of a diagram, the relationships are:

$$\begin{array}{ccc}
 [VP:\text{ə}] & & [Vl/s/n/m:\text{ə}] \\
 [V:P] \quad (\bar{h}) & \left. \vphantom{\begin{array}{c} [V:P] \\ [V:Ph\text{ə}] \end{array}} \right\} (6.3) & [V:l/s/n/m] \\
 [V:Ph\text{ə}] \quad (h) & & [Vl/s].
 \end{array}$$

A two-term prosodic quantity system is set up here to deal with these kinds of syntagmatic relationships between the final consonant and preceding ( and following) vowel. The two terms of the system have been named l (after length in the vowel) and s (after shortness in the vowel).

The phonetic exponents of l (6.2.1) and s (6.2.2) are stated below:



Piece	Vowel	Consonant	Examples.
p-final	short.	short.	[chɪp] [lʊk] [mæc] [nɪb] [səj] [ləph] [lɪkh]



6.2.1 1

## Phonetic Exponents

Piece	Vowel	Consonant	Vowel	Examples	S.No.
(1) p-final	length	short.	—	[nap] [ret] [leɾ] [sek] [bec] [ɖob] [sod] [god] [jag] [bij]	1. 2. 3. 4. 5. 6. 7. 8. 9. 10.
(2) c-final	"	short+lat./frict.	—	[bol]	11.
		" + "		[kos]	12.
	short.	" + "		[cəl]	13.
	"	" + "		[phəs]	14.
	length+nas.	" + nas.		[cũm]	15.
(3) p-final	" "	" "		[tãn]	16.
	"	" + plos.	cent.+short.	[buthə]	17.
	"	" "	" "	[bɛɾhə]	18.
	"	" "	" "	[dekhə]	19.

6.2.2

S

## PHONETIC EXPONENTS

Piece	Vowel	Consonant	Vowel	Examples	S.No.
p-final	short.	length	cent.+short.	[dʊb:ə]	1.
				[səd:ə]	2.
				[gəɖ:ə]	3.
				[ləg:ə]	4.
				[bəj:ə]	5.
				[təp:ə]	6.
				[kət:ə]	7.
				[kʊɖ:ə]	8.
				[cʊk:ə]	9.
				[nəc:ə]	10.
				[ɖəp:hə] <sup>1</sup>	11.
				[cɪt:hə]	12.
				[ʊɖ:hə]	13.
				[sɪk:hə]	14.
				[pʊc:hə]	15.
c-final	short.	length+lat./ fric.	cent.+short.	[hɪl:ə]	16.
	short.	" "	cent.+short.	[həs:ə]	17.
	short+nas.	length+nas.	cent.+short.	[cũm:ə]	18.
	short+nas.	length+nas.	cent.+short.	[mẽn:ə]	19.

1. It is important to note that [f:] is in free variation with [p:h] in this example, and in other such examples.

6.3            h - Ĥ System: It becomes clear from the phonetic exponents of the two terms of the Quantity System: l (6.2.1) and s (6.2.2), stated above that in one type of p-piece lexical item partial-voicing combined with high volume velocity in a following vowel ( [hə] ) is syntagmatically associated with voicelessness of the preceding (final ) consonant. In other types, however, we find that voice in the final vowel ([ə]) is linked with voice or voicelessness in a preceding consonant each as an alternative feature, the vowel that precedes the (final) consonant being central/centralized, and short, in each case, and the final, central short vowel, being optional. On the other hand, there is another type of p-piece lexical item where length in the preceding vowel in a final piece is syntagmatically associated with shortness of the final consonant and, optionally, also with a following vowel which must be central, partially voiced combined with high volume velocity, and short. In another type still of p-piece lexical item length in the preceding vowel is linked with shortness in the final consonant.

To account for these syntagmatic relationships between the vowel and the consonant in a syllable-final piece, a two term prosodic system h - Ĥ has been set up here. The two terms of the system are named h (from the aspiration feature) and Ĥ (non-h).

The phonetic exponents of h (6.3.1) and Ĥ (6.3.2) are as follows:



6.3.1      h

## PHONETIC EXPONENTS

Vowel	Consonant	Vowel	Examples	S.No.
short.	vcless.+length	p-voice initially, high volume velocity	[dɛp:h(ə)] [cɪt:h(ə)] [ʊt:h(ə)] [sɪk:h(ə)] [pʊc:h(ə)]	1. 2. 3. 4. 5.
length	vcless+short.	"      "	[bʊth(ə)] [bɛt̥h(ə)] [dek̥h(ə)]	6. 7. 8.

6.3.2

h (non-h)

## PHONETIC EXPONENTS

Vowel	Consonant	Vowel	Examples	S.No.
short+cent.	voice+length	voice	[ ḍ b:ə ]	1.
			[ ṣ ɛd:ə ]	2.
			[ g̣ ɛd:ə ]	3.
			[ ḷ ɛg:ə ]	4.
			[ ḅ ɛj:ə ]	5.
short+cent.	vcless.+length	voice	[ ṭ ɛp:ə ]	6.
			[ ḳ ɛt:ə ]	7.
			[ ḳ ɛt:ə ]	8.
			[ c̣ ɛk:ə ]	9.
			[ ṇ ɛc:ə ]	10.
length+peri.	vcless.+short.	—	[nap]	11.
			[ret]	12.
			[let]	13.
			[sek]	14.
Short.+ cent.	" "		[bec]	15.
length + peri.	voice+short.	—	[mæc]	15A
			[dob]	16.
			[sód]	17.
			[god]	18.
			[jag]	19.
			[bij]	20.
Short.+ cent.			[səj]	20A.

6.4            v -  $\bar{v}$  System: The phonetic exponents of s (6.2.2) stated above show that in one type voice in the final consonant is syntagmatically associated with voice in a following vowel [ə]. In the remaining type of s-lexical item, on the other hand, voicelessness in the final consonant is linked with voice [ə] or partial-voicelessness [hə] in the following vowel as an alternative feature.

We can deal with such a type of syntagmatic relationship between the final consonant and the following vowel by setting up a two-term prosodic system v -  $\bar{v}$  as a sub-system for s. The two terms of the system are named v (after voice in the final consonant) and  $\bar{v}$  (non-v).

The phonetic exponents of v (6.4.1) and  $\bar{v}$  (6.4.2) are stated as follows:

6.4.1            v

PHONETIC EXPONENTS

Consonant	Vowel	Examples	S.No.
voice	voice	[ d ũb:ə ]	1.
		[ s 'əd:ə ]	2.
		[ g əd:ə ]	3.
		[ l əg:ə ]	4.
		[ b əj:ə ]	5.
		[ s ə ]	5A
		[ h ɪl:ə ]	6.
		[ c ũm:ə ]	7.
		[ m ãn:ə ]	8.

6.4.2  $\bar{Y}$ 

## PHONETIC EXPONENTS

Consonant	Vowel	Examples	S.No.
vcless.	voice	[ ṭ .əp:ə]	1.
		[ k ət:ə]	2.
		[ k ṿṭ:ə]	3.
		[ c ṿk:ə]	4.
		[ n əc:ə]	5.
vcless.	p-vless.	[ ḍ əp:hə]	6.
		[ c ɪt:hə]	7.
		[ ṿṭ:hə]	8.
		[ s ɪk:hə]	9.
		[ p ṿc:hə]	10.
vcless.	voice	[ h əs:ə]	11.

6.5 n -  $\bar{n}$  System: It becomes clear from the phonetic exponents of the c-piece lexical items and f-piece lexical items stated above (6.1.2) and (6.1.3) that in one type, nasalization as a feature of the preceding vowel is syntagmatically associated with the final nasal. In another type, however, non-nasality in the final consonant is linked with non-nasalization in a preceding vowel:

To deal with this type of syntagmatic relationship between the final consonant and a preceding vowel, a two-term prosodic sub-system n -  $\bar{n}$  has been set up here for the c-type and r-type lexical items. The two terms are named n (after nasality in the final consonant and nasalization in the preceding vowel) and  $\bar{n}$ (non-n).



The phonetic exponents of  $n$  (6.5.1) and  $\bar{n}$  (6.5.2) are as follows:

6.5.1  $n$

PHONETIC EXPONENTS

Piece	Vowel	Consonant	Vowel	Examples	S.No.
c-piece	nasaliz.	nas.	cent.+short.	[cũm:ə]	1.
			" "	[mẽn:ə]	2.
			— —	[cũm]	3.
				[tãn]	4.
r-piece	"	"		[bẽn]	5.
				[jãn]	6.

6.5.2  $\bar{n}$

PHONETIC EXPONENTS

Piece	Vowel	Consonant	Vowel	Examples	S.No.
c-piece	orality	lat.	—	[bol]	1.
	"	frict.	—	[kos]	2.
	"	lat.	—	[cəl]	3.
	"	frict.	—	[phəs]	4.
	"	lat.	cent.+short.	[hɪl:ə]	5.
	"	frict.	" "	[həs:ə]	6.
r-piece	"	lat.	—	[mɛl]	7.
	"	trill+alv.	—	[car]	8.
	"	flap	—	[paɾ]	9.
	"	lat.	—	[mɛl]	10.
	"	trill+alv.	—	[cər]	11.
	"	flap	—	[mɪɾ]	12.

6.6 On the basis of the similarity in the syntagmatic association of phonetic exponents within the verb-root final as described in the foregoing sections, the 72 types of verb root can be put into the following fifteen prosodic groups:

I p h v̄ l

1. [nap]

2. [ret]

3. [let̚]

4. [sek]

5. [bec]

5A [mæc]

IV p h v̄ s

14. [t̚əp:ə]

15. [kət:ə]

16. [kʊt̚:ə]

17. [cuk:ə]

18. [nəc:ə]

II p (h) v l

6. [d̚ob]

7. [sód]

8. [gɔd̚]

9. [jag]

10. [biɟ]

10A [sɔɟ]

V p h v̄ s

19. [d̚əp:h(ə)]

20. [cɪt:h(ə)]

21. [ʊt̚:h(ə)]

22. [sɪk:h(ə)]

23. [puc:h(ə)]

III p h (v) l

11. [buth(ə)]

12. [bɛt̚h(ə)]

13. [dekh(ə)]

13A [lɪkh]

VI p (h) v s

24. [d̚ub:ə]

25. [səd:ə]

26. [gəɔ:ə]

27. [læg:ə]

28. [bəɟ:ə]

VII k

29. [kẽmb]

30. [rẽnd]

31. [cẽɲɔ]

32. [t̚ẽŋg]

33. [pĩɲɟ]

VIII c n̄ l

34. [bol]

35. [cəl]

36. [kos]

37. [phəs]

IX c n̄ s

38. [hɪl:ə]

39. [həs:ə]

X c n l

40. [cũm]

41. [tãn]

XI <u>c n s</u>	XIV <u>ə</u>	XV <u>o</u>
42. [cũm:ə]	52. [(tək):ər]	66. [ji]
43. [mẽn:ə]	53. [(cop)ər]	67. [de]
	54. [(bəd)əl]	68. [pɛ]
XII <u>f n̄</u>	55. [(nig)əl]	69. [pa]
44. [mɛl]	56. [(šər)əm]	70. [sõ]
45. [car]	57. [(tər)əs]	71. [co]
46. [par]	58. [(kəl)əp]	72. [tù]
47. [məl]	59. [(bər)ət]	
48. [cər]	60. [(v̥l)ət]	
49. [mur]	61. [(khər)ək]	
	62. [(khur)əc]	
XIII <u>f n</u>	63. [(tər)əph]	
50. [jãṇ]	64. [(pər)əkh]	
51. [bõṇ]	65. [(sém)əj]	

As has already been stated above (6.6) the 72 types of verb-roots can be grouped into fifteen prosodic groups, each of the groups contains more than one type of verb-root. Any further phonological distinctions can, therefore, be stated as exponents of -C and -V phonematic units. This has, however, been deferred till *a later* chapter, because another set of syntagmatically associated features, to be drawn from the verb-root final syllable and the inflexion-initial syllable (intra-verbal junction) is still to be taken into account.

## CHAPTER VII

### VERB-ROOT FINAL AND SUFFIX INITIAL

7.0      INTRODUCTION: An attempt has been made in this chapter to give an account of the syntagmatic relationships that have been found to exist between the syllable-final of the final syllable of a verb-root and the syllable-initial of the initial syllable of the suffix that combines with such a root within a given verb word. The Final System (6.1) previously treated in relation to Interverbal Junction is now applied to the Intra-verbal Junction piece. A five-term Juncture System is stated to account for the phonetic variation in the syllable final.

7.1      INTRAVERBAL JUNCTION: The verb is found to exhibit some syntagmatic differences in its phonetic form in different junction contexts. The following types of verb in their unsuffixed form as well as in combination with some suffixes like DA, NA, IA can be considered here for the sake of discussion, [cit:hə, bol, kēmb, paɾ, bəɾət, co]:

S.No.	Unsuffixed	DA	NA	IA
1.	[cit:hə]	[cit:həda	ċit:hēṇā	cit:hia]
2.	[bol]	[bolda	bolēṇā	bolia]
3.	[kēmb]	[kēmbda	kēmbēṇā	kēmbia]
4.	[paɾ]	[paɾda	paɾnā	paɾia]
5.	[bəɾət]	[bəɾətɖa	bəɾətēṇā	bəɾətia]
6.	[co]	[cōṇda	cōṇā	coia]



## English Translation:

1. chew	chewing	to chew	chewed
2. speaking	speaking	to speak	spoke
3. shiver	shivering	to shiver	shivered
4. tear	tearing	to tear	tore
5. use	using	to use	used
6. milk	milking	to milk	milked

In some cases it seems easy to distinguish a boundary between the final of the root and the initial of the suffix. If the DA piece form [cit:həda] in example number (1) is compared with the unsuffixed form [cit:hə] it would seem that there is no difficulty in assigning [cit:hə] to the root and [da] to the suffix. This cannot easily be done if the form [cit:hẽṇã] in the NA piece in example (1) is compared with the unsuffixed form [cit:hə], for the nasalization feature of the vowel [ẽ] seems more appropriate to the suffix [ṇã] with its nasal ([ṇ]) while other features of this vowel, the centrality, the half-openness, the orality seem more appropriate to the root as in [cit:hə], the unsuffixed form. The difficulty is even greater when the NA piece form [kẽmbẽṇã] is compared with the unsuffixed form [kẽmb] in example (3), for neither the root nor the suffix has any special claim on the nasalized central vowel [ẽ] to be observed when this root and suffix are combined. Another extreme example is example (6) in which the root [co] itself has an oral vowel in Inter-verbal Junction, where it is unsuffixed, but a nasalized vowel in certain types of Intra-verbal Junction such as the DA type and

the NA type. It is therefore, probably not cowardly but prudent simply to avoid allocating sounds and features of sounds to one or other of the elements concerned in the junction, the verb root and the verb suffix, and treat the features concerned as arising naturally out of the junction.

The differences in the phonetic form of a verb lexical item like those noted above can be explained in terms of the syntagmatic relationships that exist between the syllable-final of the final syllable of a verb-root and the syllable-initial of the initial syllable of the suffix that combines with such a root in a given verb (word) lexical item.

The features of the syllable-final of the final syllable of a verb-root are considered here in association with the features of the syllable-initial of the initial syllable of the suffix in five types of piece in order to account for phonetic variation in the syllable final. For this purpose five different types of piece, and a five-term prosodic system, are established. This prosodic system has been named the Juncture System<sup>1</sup>, which comprises d, n, v, m, and k.

Just as it proves necessary to account for variation in the syllable-final of the root so it is also necessary to account for phonetic variation in the syllable-initial of the suffix, but this is quite straightforward because the six-term Final System (6.1) is almost completely adequate for this purpose.

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1. cf. Sprigg 1963 (p.91).

The various suffix lexical items are symbolised each in a single lexemic spelling, e.g., DA, NA, IA, MA and KE, each of which symbolises the full range of inflected forms. Thus the suffix DA is a generalisation from four inflected forms, e.g.,

S.No.	Masc. Sing.	Masc. Pl.	Fem. Sing.	Fem. Pl.
1.	[ da	de	di	diã ]
2.	[ nda	nde	ndi	ndiã]
3.	[ unda	unde	undi	undiã]
4.	[ əda	əde	ədi	ədiã]

That is to say that DA represents all the inflexions in their phonetic forms as given above. The phonetic behaviour in different junction contexts is the basis of grouping these grammatically different inflexions together.

The different types of verb-roots have already been classified into six major prosodic groups in accordance with syntagmatically associated features of the syllable-final of the root in 6.1 Interverbal Junction. It will be recalled that the Final System set up there has the following six terms:

1. p (after plosion, plosives being dominant in this type of the root-final syllable) (7.1.1).
2. c (after continuance, which includes features like laterality, friction and nasality) (7.1.2).

3. f (after flap, although it so happens that trill is also included) (7.1.3).
4. k (after the first sound of cluster of a homorganic nasal and a plosive/affricate) (7.1.4).
5. ə (after [ə] , this being the only vowel found in the syllable-final of the root) (7.1.5).
6. o (after open, where the verb-root has a vowel final) (7.1.6).

The phonetic exponents of each of these terms of the Final System, as it applies to Intraverbal Junction, are each a sequence of features drawn from both syllables of the junction, the verb-root syllable-final and the suffix syllable-initial.

The phonetic exponents are stated as under:



7.1.1 p The Phonetic Exponents of p

## 7.1.1.1

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
d	plos./affric. + short.	plos.+ voice	[napda]	1.
			[ret <sup>1</sup> da]	2.
			[letda]	3.
			[sekda]	4.
			[becda]	5.
	plos./affric. + short.	"	[chipda]	5A.
[dobda]			6.	
[sódda]			7.	
[godda]			8.	
[jagda]			9.	
			[bijda]	10.
	plos./affric. + length	vow.+cent.+ short.+ oral.	[səjda]	10A
			[təp:əda]	11.
			[kət:əda]	12.
			[kʊt:əda]	13.
			[cuk:əda]	14.
			[nēc:əda]	15.
	plos./affric. +length	"	[dəp:həda]	16.
			[cɪt:həda]	17.
			[ʊt:həda]	18.
			[sɪk:həda]	19.
			[pʊc:həda]	20.

1. p(d) Since the I.P.A. has no symbol for the audible release of a plosive, it has not been possible in this and corresponding transcription to show that [p], [t], [t̚], [k] and [c] have the option of audible release. The absence of audible release is the more common of the options and could be symbolized in greater detail by such a transcription as [ret<sup>1</sup>da] following the approval of this symbol by the Association in its Journal (Vol.6 , No.1, June 1976 , p.2).

p (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS			EXAMPLES	S.No.
	STEM + SUFFIX				
d	plos./affric. + length	vow.+cent.+ short.+ oral.	plos.+ voice	[dub:əda]	21.
				[səd:əda]	22.
				[gəḍ:əda]	23.
				[ləg:əda]	24.
				[bəj:əda]	25.
	plos.+ short.	"	"	[buthəda]	26.
[beṭhəda]				27.	
[dekhəda]				28.	
				[lɪkhəda]	28A.
7.1.1.2					
n	vow.+length, plos./affric. +vcless.+ short.	vow.+cent.+ short.+nas.	nas.+ret. +apic.	[napẽṇã]	29.
				[retẽṇã]	30.
				[leṭẽṇã]	31.
				[sekẽṇã]	32.
				[becẽṇã]	33.
	vow.+length, plos./affric. voice+short.	"	"	[chɪpẽṇã]	33A.
[dɔbẽṇã]				34.	
[sódẽṇã]				35.	
[godẽṇã]				36.	
[jagẽṇã]				37.	
				[bijẽṇã]	38.
				[səjẽṇã]	38A.
	vow.+short, plos./affric. vcless.+ length.	"	"	[ṭəp:ẽṇã]	39.
[kət:ẽṇã]				40.	
[kʊṭ:ẽṇã]				41.	
[cuk:ẽṇã]				42.	
[nəc:ẽṇã]				43.	

p (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS			EXAMPLES	S.No.
	STEM + SUFFIX				
n	vow.+length, plos./affric. +vcless.+asp. + length	vow.+cent.+ short.+nas.	nas.+ret. +apic.	[d̪əp:hẽṇã]	44.
				[cɪt:hẽṇã]	45.
				[ʊt̪:hẽṇã]	46.
				[sɪk:hẽṇã]	47.
				[puc:hẽṇã]	48.
	vow.+length, plos./affric. +voice+length	"	"	[d̪ub:ẽṇã]	49.
[səd:ẽṇã]				50.	
[gəd̪:ẽṇã]				51.	
[ləg:ẽṇã]				52.	
[bəj:ẽṇã]				53.	
	vow.+length, plos.+vcless. +short.+asp.	"	"	[buthẽṇã]	54.
[beṭhẽṇã]				55.	
[dekhẽṇã] [lɪkhẽṇã]				56. 56A.	
7.1.1.3					
v	plos./affric.. +short.		syllabic vowel	[napɪa]	57.
				[retɪa]	58.
				[leṭɪa]	59.
				[sekɪa]	60.
				[becɪa]	61.
				[chɪpɪa]	61A.

p (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
v .	plos./affric. + short.	"	[dɔbɪa]	62.
			[sɔdɪa]	63.
			[gɔdɪa]	64.
			[jagɪa]	65.
			[bijɪa]	66.
			[sɔjɪa]	66A.
	plos./affric. + length	"	[tɔp:ɪa]	67.
			[kɔt:ɪa]	68.
			[kʊt:ɪa]	69.
			[cʊk:ɪa]	70.
			[nɔc:ɪa]	71.
	"	"	[dɔp:hɪa]	72.
			[cɪt:hɪa]	73.
			[ʊt:hɪa]	74.
			[sɪk:hɪa]	75.
			[pʊc:hɪa]	76.
	"	"	[dʊb:ɪa]	77.
			[sɔd:ɪa]	78.
			[gɔd:ɪa]	79.
			[lɔg:ɪa]	80.
			[bɔj:ɪa]	81.
	plos.+short.	"	[bʊthɪa]	82.
			[bɛθɪa]	83.
			[dekɪa]	84.
			[tɪkɪa]	84A.



p (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
7.1.1.4 m	plos/affric. + short.	syllabic vowel + nasaliz.	[napã]	85.
			[retã]	86.
			[letã]	87.
			[sekã]	88.
			[becã] [chɪpã]	89. 89 A
"	"	[dɔbã]	90.	
		[sódã]	91.	
		[godã]	92.	
		[jagã]	93.	
		[bijã] [səjã]	94. 94 A	
plos/affric. + length	"	[təp:ã]	95.	
		[kət:ã]	96.	
		[kʉt:ã]	97.	
		[cʉk:ã]	98.	
		[nəc:ã]	99.	
"	"	[dəp:hã]	100.	
		[cɪt:hã]	101.	
		[ʉt:hã]	102.	
		[sɪk:hã]	103.	
		[pʉc:hã]	104	
"	"	[dʉb:ã]	105.	
		[səd:ã]	106.	
		[gəɖ:ã]	107.	
		[ləg:ã]	108.	
		[bəj:ã]	109.	

p (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS			EXAMPLES	S.No.
	STEM + SUFFIX				
m	plos. + short.		syllabic vowel + nasaliz.	[buthã]	110.
				[beṭhã]	111.
				[dekhã]	112.
				[lɪkhã]	112A
7.1.1.5	plos/affric. + short.		plos. + vcless.	[napke]	113.
k				[retke]	114.
				[leṭke]	115.
				[sekke]	116.
				[becke]	117.
				[chɪpke]	117A
				[ḍobke]	118.
				[s'odke]	119.
				[godke]	120.
				[jagke]	121.
				[bijke]	122.
				[səjke]	122A
				[ṭəp:əke]	123.
				[kət:əke]	124.
				[kʊṭ:əke]	125.
				[cuk:əke]	126.
				[nəc:əkə]	127.

p (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS			EXAMPLES	S.No.
	STEM + SUFFIX				
k	plos./affric. + length	"	plos. + vcless.	[d̥əp:həke]	127.
				[cɪt:həke]	128.
				[ʊt̚:həke]	129.
				[pʊc:həke]	130.
				[sɪk <sup>h</sup> :əke]	131.
	"	"	"	[d̥ʊb:əke]	132.
				[səd:əke]	133.
				[gəd̚:əke]	134. -
				[ləg:əke]	135. -
				[bəj:əke]	136.
	plos. + short.		"	[bʊthke]	137. -
[bɛt̚hke]				138. -	
[dekhke]				139. -	
[ɪɪkhke]				140 A.	

7.1.2 The Phonetic Exponents of c

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
7.1.2.1				
d	lat,+short.	plos. + voice	[bolda]	1.
	lat,+short.		[cəlda]	2.
	frict,+short.		[kosda]	3.
	frict,+short.		[phəsda]	4.

c (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS /			EXAMPLES	S.No.
	STEM + SUFFIX				
d	lat.+length	vow.+cent. + short.+ <i>oral</i> .	plos. + voice	[hɪl:əda]	5.
	frict.+ "	"		[həs:əda]	6.
	nas.+short.			[cũmda]	7.
	"	"		[tãnda]	8.
	" +length	vow.+cent. + short.+ <i>oral</i> .		[cũm:əda]	9.
	"	"	"	[mẽn:əda]	10.
7.1.2.2					
n	lat. + short.	vow.+cent. + short.+ <i>nasliz</i> .	nas.	[bolẽṇã]	11.
	"	"		[cəlẽṇã]	12.
	frict.+ "			[kosẽṇã]	13.
	"	"		[phəsẽṇã]	14.
	lat.+length			[hɪl:ẽṇã]	15.
	frict.+ "			[həs:ẽṇã]	16.
	nas. +short.			[cũmẽṇã]	17.
	"	"		[tãnẽṇã]	18.
	" length			[cũm:ẽṇã]	19.
	"	"		[mẽn:ẽṇã]	20.
7.1.2.3					
v	lat.+short.		syllabic vowel	[bolɪa]	21.
	"	"		[cəlɪa]	22.
	frict.+short.			[kosɪa]	23.
	"	"		[phəsɪa]	24.
	lat.+length			[hɪl:ɪa]	25.
	frict.+ "			[həs:ɪa]	26.
	nas.+ short.			[cũmɪa]	27.
	"	"		[tãnɪa]	28.



c (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
v	nas. +length	syllabic vowel	[cũm:ia]	29.
	" "		[mẽn:ia]	30.
7.1.2.4 m	lat.+short.	syllabic vowel + nas.	[bolã]	31.
	" "		[cəlã]	32.
	frict.+ "		[kosã]	33.
	" "		[phəsã]	34.
	lat.+length		[hɪl:ã]	35.
	frict.+ "		[həs:ã]	36.
	nas.+short.		[cũmã]	37.
	" "		[tãnã]	38.
	" length		[cũm:ã]	39.
	" "		[mẽn:ã]	40.
7.1.2.5 k	lat.+short.	plos.+ vcless.	[bolke]	41.
	" "		[cəlke]	42.
	frict.+ "		[koske]	43.
	" "		[phəske]	44.
	lat.+length	vas.+cent.+short. +oral.	[hɪl:əke]	45.
	frict.+ "	"	[həs:əke]	46.
	nas.+lab.+short.	—	[cũmke]	47.
	" +dent.+ "	—	[tãnke]	48.
	" +lab. + length	"	[cũm:əke]	49.
	" +dent.+ "	"	[mẽn:əke]	50.

7.1.3 The Phonetic Exponents of f

Type of Juncture Piece	PHONETIC EXPONENTS			EXAMPLES	S.No.
	STEM + SUFFIX				
7.1.3.1 d	lat.+ret.		plos.	[meɭda]	1.
	trill+non-ret.		"	[carda]	2.
	flap+ret.		"	[paɾda]	3.
	lat.+ret.		"	[məɭda]	4.
	trill+non-ret.		"	[cərda]	5.
	flap+ret.		"	[muɾda]	6.
	nas.+ "		"	[jãnda]	7.
	" "		"	[bẽnda]	8.
7.1.3.2 n	lat.+ret.	vow.+cent. + short.+nasaliz.	nas.	[meɭẽnã]	9.
	trill+non-ret		"	[carnã]	10.
	flap+ ret.		"	[paɾnã]	11.
	lat.+ "	vow.+cent. +short.+nasaliz	"	[məɭẽnã]	12.
	trill+non-ret.		"	[cərnã]	13.
	flap+ ret.		"	[muɾnã]	14.
	nas.+ "	vow.+cent. +short.+nasaliz.	"	[jãɳẽnã]	15.
	" "	" "	"	[bẽɳẽnã]	16.
7.1.3.3 v	lat.+ret.		syllabic vowel	[meɭia]	17.
	trill+non-ret.			[caria]	18.
	flap+ ret.			[paɾia]	19.
	lat.+ "			[məɭia]	20.
	trill+non-ret.			[cəria]	21.
	flap+ ret.			[muɾia]	22.
	nas.+ "			[jãɳia]	23.
	" "			[bẽɳia]	24.

f (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
7.1.3.4				
m	lat. + ret.	syllabic vowel+nas.	[meḷã]	25.
	trill+non-ret.		[carã]	26.
	flap+ ret.		[paṛã]	27.
	lat. + "		[məḷã]	28.
	trill+ "		[cərã]	29.
	flap+ "		[muṛã]	30.
	nas.+ "		[jãṇã]	31.
	" "		[bẽṇã]	32.
7.1.3.5				
k	lat.+ret.	plos.+ vcless.	[meḷke]	33.
	trill+non-ret.		[carke]	34.
	flap+ ret.		[paṛke]	35.
	lat.+ "		[məḷke]	36.
	trill+non-ret.		[cərke]	37.
	flap+ret.		[muṛke]	38.
	nas.+ "		[jãṇke]	39.
	nas.+ "		[bẽṇke]	40.

7.1.4 The Phonetic Exponents of k

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.	
	STEM + SUFFIX				
<hr/>					
7.1.4.1					
d	nasaliz., nas., plos/ affrict.+ voice	plos.+ voice	[kẽmbda] [rẽndda] [cẽṇḍda] [ṭẽṅgda] [pĩṇjda]	1. 2. 3. 4. 5.	
<hr/>					
7.1.4.2					
n	"	nas.+vow.+ cent.+short.	nas.+ret. +apic.	[kẽmbẽṇã] [rẽndẽṇã] [cẽṇḍẽṇã] [ṭẽṅgẽṇã] [pĩṇjẽṇã]	6. 7. 8. 9. 10.
<hr/>					
7.1.4.3					
v	"		syllabic vowel	[kẽmbia] [rẽndia] [cẽṇḍia] [ṭẽṅgia] [pĩṇjia]	11. 12. 13. 14. 15.
<hr/>					
7.1.4.4					
m	"		"	[kẽmbã] [rẽndã] [cẽṇḍã] [ṭẽṅgã] [pĩṇjã]	16. 17. 18. 19. 20.



k (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
7.1.4.5				
k	nas.,plos./ affric.	plos.+ vcless.	[kãmbkē]	21.
			[rãndke]	22.
			[cãṇḍke]	23.
			[ṭãṅgke]	24.
			[pĩṇjke]	25.

7.1.5 Phonetic Exponents of ə

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
7.1.5.1				
d	vow.+short. +cent.	trill+short. plos.	[ṭək:ərda]	1.
		ret.+flap +short.	[copərda]	2.
		lat.+short.	[bədəlda]	3.
		ret.+lat. short.	[nigəlda]	4.
		nas.+lab. +short.	[šərəmda]	5.
		frict.+short.	[tərəsda]	6.
		plos/affric. +vcless.+short.	[kəḷəpda]	7.
			[bərətda]	8.
			[vḷətṭda]	9.
			[khəṛəkda]	10.
			[khurəcda]	11.

ə (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
ā	plos. + vcless. + asp. + short,	plos.	[təɾəphda]	12.
	"		[pəɾəkhda]	13.
	affric. + voice + short,		[səməjda]	14.
7.1.5.2				
n	vow.+cent.+ short., trill +short.	nas.+non- ret.+dent.	[tək:əɾnā]	15.
	vow.+cent.+ short, ret. +flap+short.		[copəɾnā]	16.
	vow.+cent.+ short, non- ret.+lat.+ short.		[bədəlɳā]	17.
	vow.+cent.+ short, ret. +lat.+short.		[nigəlɳā]	18.
	vow.+cent.+ short, lab.+ nas.+short	vow.+cent.+ short.+nas. ret.+nas. +alv.	[šəɾəmɳā]	19.
	vow.+cent.+ short, frict. +short	"	[təɾəsɳā]	20.
	vow.+cent.+ short,plos/ affric.+ vcless.+ short,	"	[kəɾəpɳā]	21.

ə (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
n		vow.+cent.+ short,+nas.	[bərətẽṇã]	22.
		"	[v̥l̥ət̥əṇã]	23.
		"	[khərəkẽṇã]	24.
		"	[khurəcẽṇã]	25.
	vow.+cent.+ short,plos. +vcless.+ asp.+short.	"	[tərəphẽṇã]	26.
		"	[pərəkḥẽṇã]	27.
	vow.+cent.+ short,, affric. +voice+short.	"	[séməjẽṇã]	28.
7.1.5.3				
v	vowel	syllabic	[ṭək:ərɪa]	29.
	cent.+short.	trill+short. vowel		
	"	ret.+flap+ short.	[copərɪa]	30.
	"	non-ret.+ lat.+short.	[bədəlɪa]	31.
	"	ret.+lat. +short.	[nɪgəlɪa]	32.
	"	lab.+nas. +short.	[šərəmɪa]	33.
	"	frict.+ vcless.+ short.	[tərəsɪa]	34.
	"	plos/affric. +vcless.+ short.	[kəlɐpɪa]	35.

ə (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.	
	STEM + SUFFIX				
v			[bərətia]	36.	
			[v̥l̥ət̥ia]	37.	
			[khərəkia]	38.	
			[khurəcia]	39.	
	plos.+ vcless.+ asp.+short.		[təɾəphia]	40.	
	"		[pərəkha]	41.	
	affric.+ voice+short.		[séməjia]	42.	
7.1.5.4					
m	vowel cent.+short.	non-ret.+ trill+short.	syllabic vowel+nas.	[t̥ək:ərã]	43.
		ret.+flap+ short.		[copəɾã]	44.
		non-ret.+ lat.+short.		[bədəlã]	45.
		ret.+lat. +short.		[nɪgəlã]	46.
		lab.+nas. +short.		[šəɾemã]	47.
		frict.+vcless. +short.		[təɾəsã]	48.
		plos/affric. +vcless.+ short.		[kəɭəpã]	49.
				[bərətã]	50.



ə (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
m			[ṽləṭṭã]	51.
			[khəṛəkã]	52.
			[khurēcã]	53.
	plos. +vcless.+asp.		[təṛəphã]	54.
			[pəṛəkhã]	55.
	affric.+ voice+short.		[sáməjã]	56.
7.1.5.5				
k	vowel+	short, plos.+	[ṭək:ərke]	57.
	cent.+short.	+non-ret.+ trill		
		ret.+flap	[copəṛḳe]	58.
		non-ret.+ lat.	[bəḍəlke]	59.
		ret.+lat.	[nɪgəḷke]	60.
		lab.+nas.	[šəṛəmke]	61.
		frict.+ vcless.	[təṛəske]	62.
		plos./affric. +vcless.	[kəḷəpke]	63.
			[bəṛətke]	64.
			[ṽləṭṭke]	65.
			[khəṛəkke]	66.
			[khurəcke]	67.
		plos.+vcless. +short,+asp.	[təṛəphke]	68.

ə (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS	EXAMPLES	S.No.
	STEM + SUFFIX		
k		[pəɾəkhke]	69.
	affric.+ voice+short.	[séməjke]	70.

7.1.6 Hitherto,(7.1.1 to 7.1.5)the v-term of the Juncture System has been exemplified from the suffix IA since there is no variation in the syllable-final of the root matching differences in vowel features in those types of piece. But in the o-term type of piece there are three types of syntagmatic variations for the v-term in relation to openness and backness/frontness features of the vowel. This means that a three-term prosodic sub-system has to be set up for the v-piece. This system is stated in 7.1.6.3 below.

The phonetic exponents of o are:

Type of Juncture Piece	PHONETIC EXPONENTS			EXAMPLES	S.No.
	STEM + SUFFIX				
7.1.6.1					
d	vow.+length +nas.	nas.+dent.	plos.+voice	[jĩnda]	1.
				[dĩnda]	2.
				[pẽnda]	3.
				[põnda]	4.
				[sõnda]	5.
				[cõnda]	6.
				[tũnda]	7.

o (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
7.1.6.2				
n	vow.+length +nas.	alv.+nas.+ ret.	[jĩṇã]	8.
			[dẽṇã]	9.
			[pẽṇã]	10.
			[põṇã]	11.
			[sõṇã]	12.
			[cõṇã]	13.
			[tũṇã]	14.
7.1.6.3				
v <sup>1</sup>	vow.+length +oral.	non-sylla- bic +vow. +front,+ spread.	[jiya]	15.
			[paya]	16.
			[coya]	17.
			[tùya]	18.
7.1.6.3.1				
v	vow.+short. +oral.	vow. sylla- bic+front. spread.	[pia]	19.
			[dɪt:a]	20.
		plos.+dent. +length	[sɪt:a]	21.
v	vow.+oral.	vow.+close +back, length+ round.	[jiu]	22.

1. v in this particular case represents IA, U and E.

o (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS			EXAMPLES	S.No.
	STEM + SUFFIX				
v	vow.+oral.		vow.+close +back,length +round.	[deu]	23.
				[pəu]	24.
				[pau]	25.
				[sə̃u]	26.
				[cou]	27.
				[t̥u]	28.
v	vow.+oral.	non-sylla- bic +vow.	vow.+½close. +front,+ length	[ji(w)e]	29.
				[de(w)e]	30.
				[pə(w)e]	31.
				[pa(w)e]	32.
				[sɔ̃(w)e]	33.
				[co(w)e]	34.
				[t̥u(w)e]	35.
7.1.6.4	vow.+nas.	(lab.+nas.)	syllabic vowel + nasaliz.	[jĩ(m)ã]	36.
m		" "		[dẽ(m)ã]	37.
		lab.+nas.		[pẽmã]	38.
		" "		[pãmã]	39.
		" "		[sõmã]	40.
		" "		[cõmã]	41.
		(lab.+nas.)		[t̥u(m)ã]	42.



o (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
7.1.6.5				
k	vow.+length +oral.	plos.+ vcless.	[jike]	43.
			[deke]	44.
			[pɛke]	45.
			[pake]	46.
	nasaliz.		[sõke]	47.
			[coke]	48.
			[tùke]	49.

As can be seen from the examples 20-21 in 7.1.6.3.1 above there are certain o-term lexical items whose behaviour is again different from the statements of phonetic exponency for the 3-terms of the sub-system stated above for the v-juncture term. These can be considered as irregular though they do show a pattern of regularity in their irregularity: plosion, dentality + voicelessness + length associated with shortness of vowel ([ɪ, ʊ]), e.g.

stem	suffix	verb form
pi	+ ia	pit:a
de	+ ia	dit:a
sõ	+ ia	sut:a

An even more unusual example [khád:a] shows an association of long vowel with long and voiced dental plosive which is found in only one other case i.e. [ríd:a]. Incidentally, the verb [kər] also behaves differently, and the form we have is [kit:a].

I have taken [ia] as being the regular phonetic form of the Past Participle suffix. But there is a handful of the o-piece verbs that have a dental consonant in this type of junction. This consonant is invariably long [t:, d:]; the consonantal length is therefore non-contrastive. This dental plosion feature may be accompanied by voice or voicelessness and there seems to be no reason for accounting for the one feature rather than the other. Its distribution is lexical. Thus the root [kha] has a form [khád:a] having voice, but seems to be alone in this. The other members of this class have voicelessness, e.g.:

[pi - pit:a], [tò - tòt:a], [nà - nàt:a] (for which [nàia] is also acceptable).

### 7.2.1 h - ĥ System

Syntagmatic phonetic differences in the Interverbal Junction made me decide to set up a prosodic system h - ĥ (7.3), and, further, every p-piece lexical item was classified accordingly as h or ĥ. In Intra-verbal Junction the phonetic exponents of h and ĥ are, naturally, again concerned with the p-piece lexical item.

It can be seen from the phonetic exponents stated for the p-term (7.1.1) that in one type of p-piece lexical item, voicelessness combined with high volume velocity of air-flow in the initial part of the vowel of the suffix [h] is syntagmatically associated with voicelessness in the final consonant of the root-final syllable, e.g., [dekhəda], [dekhɪa] [dekhẽṇã] [dekhke]. This may be contrasted with the remaining type of p-piece lexical item in which full voice in a following vowel is syntagmatically associated with voice or voicelessness in the final consonant of the syllable-final in a root-final syllable as an alternative feature, e.g., [sekda] [jagdā] [sekɪa] [jagɪa] [təp:əda][təp:ɪa].

To deal with this syntagmatic relationship existing between the root-final consonant and the suffix-initial vowel, a two-term prosodic sub-system h - ĥ can be stated for the p-piece. The two terms of the System are named h (after aspiration in the consonant) and ĥ (non-h).

The phonetic exponents of h (7.2.1.1) and ĥ (7.2.1.2) are as follows:

7.2.1.1 The Phonetic exponents of h

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
d	plos./affric. +vcless.	vow.+p-vcless, +high volume velocity	[d̥əp:həda]	1.
			[cɪt:həda]	2.
			[ʊt̪:həda]	3.
			[sɪk:həda]	4.
			[puc:həda]	5.
	plos.+vcless.	"	[buthəda]	6.
			[be̞t̪həda]	7.
			[dekhəda]	8.
			[ɪkhəda]	8A
n	plos./affric. +vcless.	vow.+p-vcless, +high volume velocity	[d̥əp:hẽṇã]	9.
			[cɪt:hẽṇã]	10.
			[ʊt̪:hẽṇã]	11.
			[sɪk:hẽṇã]	12.
			[puc:hẽṇã]	13.
	plos.+vcless.	"	[buthẽṇã]	14.
			[be̞t̪hẽṇã]	15.
			[dekhẽṇã]	16.
			[ɪkhẽṇã]	16A
v	plos./affric +vcless.	vow.+p-vcless, +high volume velocity	[d̥əp:hɪa]	17.
			[cɪt:hɪa]	18.
			[ʊt̪:hɪa]	19.
			[sɪk:hɪa]	20.
			[puc:hɪa]	21.



h (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
v	plos.+vcless.,vow.+p-vcless. +high volume velocity		[buthia]	22.
			[beṭhia]	23.
			[dekhia]	24.
			[lɪkhia]	24A
m	plos./affric, +vcless.	vow.+p- vcless.+ high vo- lume velocity	[d̪əp:hã]	25.
			[cɪt:hã]	26.
			[uṭ:hã]	27.
			[sɪk:hã]	28.
	plos.+vcless.	"	[puc:hã]	29.
			[buthã]	30.
			[beṭhã]	31.
			[dekhã]	32.
			[lɪkhã]	32A
			[d̪əp:həke]	33.
k	plos./affric. +vcless.	vow.+p- <sub>1</sub> vcless.	[cɪt:həke]	34.
			[uṭ:həke]	35.
			[sɪk:həke]	36.
			[puc:həke]	37.
	plos.+vcless.	"	[buthkə]	38.
			[beṭhkə]	39.
			[dekhkə]	40.
			[lɪkhkə]	40A.

1. Partial voicelessness in the vowel is accompanied by a high volume velocity of air-flow.

7.2.1.2 The Phonetic exponents of  $\bar{h}$ 

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
d	plos./affric. +vcless.	plos.+voice	[napda]	1.
			[retda]	2.
			[leṭda]	3.
			[sekda]	4.
			[becda]	5.
	plos./affric. +voice		[chɪpda]	5A
			[ḍobda]	6.
			[sódḍa]	7.
			[godḍa]	8.
			[jagda]	9.
	plos./affric. voice+vow. + vcless.		[bijda]	10.
			[səjda]	10A.
			[ṭəp:əda]	11.
			[kət:əda]	12.
			[kʊṭ:əda]	13.
	plos./affric. +voice	"	[cʊk:əda]	14.
			[nəc:əda]	15.
			[ḍub:əda]	16.
			[səd:əda]	17.
			[gəḍ:əda]	18.
		[ləg:əda]	19.	
		[bəj:əda]	20.	

h̄ (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
n	plos./affric.voice+vow. +vcless.		[napẽṇã]	21.
			[retẽṇã]	22.
			[letẽṇã]	23.
			[sekẽṇã]	24.
	plos./affric. + voice	"	[becẽṇã]	25.
			[chɪpẽṇã]	25A.
			[dɔbẽṇã]	26.
			[sódẽṇã]	27.
			[godẽṇã]	28.
			[jagẽṇã]	29.
			[bijẽṇã]	30.
			[sɔjẽṇã]	30A.
n	plos./affric. + vcless.	vow.+voice	[təp:ẽṇã]	31.
			[kət:ẽṇã]	32.
			[kʊt:ẽṇã]	33.
			[cʊk:ẽṇã]	34.
			[nɛc:ẽṇã]	35.
	plos./affric. + voice	"	[dʊb:ẽṇã]	36.
			[səd:ẽṇã]	37.
			[gəd:ẽṇã]	38.
			[ləg:ẽṇã]	39.
			[bəj:ẽṇã]	40.

h (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.	
	STEM + SUFFIX				
v	vcless.	vow.+voice	[napia]	41.	
			[retia]	42.	
			[leɽia]	43.	
			[sekia]	44.	
			[becia]	45.	
			[chɪpɪa]	45A	
		voice	" "	[ɖobia]	46.
				[sódia]	47.
				[goɖia]	48.
				[jagia]	49.
	vcless.	" "	[bijia]	50.	
			[sɔɟia]	50A.	
			[təp:ia]	51.	
			[kət:ia]	52.	
			[kuɽ:ia]	53.	
			[cuk:ia]	54.	
			[nəc:ia]	55.	
		voice	" "	[ɖub:ia]	56.
				[səd:ia]	57.
				[gəɖ:ia]	58.
	[ləg:ia]		59.		
		[bəj:ia]	60.		



h̄ (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
m	vcless.	vow.+voice	[napã]	61.
			[retã]	62.
			[letã]	63.
			[sekã]	64.
			[becã]	65.
			[chɪpã]	65A.
	voice	" "	[dɔbã]	66.
			[sódã]	67.
			[godã]	68.
			[jagã]	69.
			[bijã]	70.
			[səjã]	70A.
	vcless.	" "	[tɔp:ã]	71.
			[kət:ã]	72.
			[kʊt:ã]	73.
			[cʊk:ã]	74.
			[nəc:ã]	75.
	voice	" "	[dʊb:ã]	76.
			[səd:ã]	77.
			[gəd:ã]	78.
			[lɛg:ã]	79.
			[bɛj:ã]	80.

h̄ (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
k	plos./affric. +vcless.	plos.+vcless.	[napke]	81.
			[retke]	82.
			[letke]	83.
			[sekke]	84.
	voice	" "	[becke]	85.
			[chipke]	85A.
			[dobke]	86.
			[sodke]	87.
	vcless.	" "	[godke]	88.
			[jagke]	89.
			[bijke]	90.
			[sajke]	90A.
	voice	" "	[təp:əke]	91.
			[kət:əke]	92.
			[kut:əke]	93.
			[cuk:əke]	94.
			[nəc:əke]	95.
			[dub:əke]	96.
			[səd:əke]	97.
			[gəd:əke]	98.
			[ləg:əke]	99.
			[bəj:əke]	100.

As a matter of distribution it should be noted that the h-term of the h-h̄ system of the Syllable-initial piece requires either the non-h-term of the syllable-final (p or ə) or it

could be the c, f, k, or o terms of the Final System. And the reverse is also the case that the h-term in the (p or ə) Final piece is matched by the non-h-term of the p-Initial piece or of the other type of initial piece, the non-p. Presumably aerodynamic reasons are responsible for preventing a heavy breath loss twice within a syllable.

### 7.2.2 v - $\bar{v}$ System

The phonetic exponents stated for the p-term (7.1.1) show that in one type of p-piece lexical item, voice in the final consonant of the root-final syllable is syntagmatically associated with full voice in a following vowel, e.g.: [læg:əda] [jagɪa] [læg:əke] [jagke]. This may, however, be contrasted with the remaining type of the p-piece lexical item in which voicelessness in the final consonant of the root-final syllable is linked either to voice or to partial-voicelessness combined with high volume velocity of air-flow in the vowel that follows such a consonant immediately, e.g., [təp:əda] [sɪk:həda] [təp:əke] [sɪk:həke].

To deal with this syntagmatic relationship between the final consonant of the root-final and initial vowel of the suffix a two-term prosodic system ( $v - \bar{v}$ ) can be set up for the p-piece. The two terms of this prosodic sub-system are named  $v$  (after voice in the consonant associated with full voice in the following vowel) and  $\bar{v}$  (non- $v$ ).

The phonetic exponents of  $v$  (7.2.2.1) and  $\bar{v}$  (7.2.2.2) are stated as follows:





v (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
v	voice	vow.+voice	[bijia] [səjia] [dub:ia]	25. 25A 26.
			[səd:ia]	27.
			[gəd:ia]	28.
			[ləg:ia]	29.
			[bəj:ia]	30.
m	voice	vow.+voice	[dɔbã]	31.
			[sódã]	32.
			[godã]	33.
			[jagã]	34.
			[bijã]	35.
			[səjã]	35A
	"	"	[dub:ã]	36.
			[səd:ã]	37.
			[gəd:ã]	38.
			[ləg:ã]	39.
			[bəj:ã]	40.
k	voice	plos.+vcless.	[dɔbke]	41.
			[sódke]	42.
			[godke]	43.
			[jagke]	44.
			[bijke]	45.
			[səjke]	45A
	"	"	[dub:əke]	46.
			[səd:əke]	47.
			[gəd:əke]	48.
			[ləg:əke]	49.
			[bəj:əke]	50.

7.2.2.2 The Phonetic exponents of  $\bar{v}$ 

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.		
	STEM + SUFFIX					
d	vcless.	plos.+voice	[napda]	1.		
			[retda]	2.		
			[leṭda]	3.		
			[sekda]	4.		
	"	vow.+voice	[becda]	5.		
			[chɪpda]	5A		
			[ṭəp:əda]	6.		
			[kət:əda]	7.		
			[kuṭ:əda]	8.		
			[cuk:əda]	9.		
			[nəc:əda]	10.		
			"	vow.+p-vcless.	[ḍəp:həda]	11.
					[cɪt:həda]	12.
					[ʊṭ:həda]	13.
	[sɪk:həda]	14.				
	"	"	[puc:həda]	15.		
			[buthəda]	16.		
			[beṭhəda]	17.		
			[dekhəda]	18.		
			[lɪkhəda]	18A		
n	vcless.	vow.+voice	[napəṇā]	19.		
			[retəṇā]	20.		
			[leṭəṇā]	21.		
			[sekəṇā]	22.		
			[becəṇā]	23.		
			[chɪpəṇā]	23A		

v̄ (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
n	vcless.	vow.+voice	[təp:õṇã]	24.
			[kət:õṇã]	25.
			[kʊt:õṇã]	26.
			[cʊk:õṇã]	27.
			[nəc:õṇã]	28.
	"	vow.+p-vcless.	[dəp:hẽṇã]	29.
			[cɪt:hẽṇã]	30.
			[ʊt:hẽṇã]	31.
			[sɪk:hẽṇã]	32.
			[pʊc:hẽṇã]	33.
	"	"	[buthẽṇã]	34.
			[beṭhẽṇã]	35.
			[dekhẽṇã]	36.
			[ɪkḥẽṇã]	36A
v	vcless.	vow.+voice	[napia]	37.
			[retia]	38.
			[leṭia]	39.
			[sekia]	40.
			[becia]	41.
	"	"	[chɪpɪa]	41A
			[təp:ia]	42.
			[kət:ia]	43.
			[kʊt:ia]	44.
			[cʊk:ia]	45.
		[nəc:ia]	46.	

v̄ (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
v	vcless.	vow.+p- vcless.	[ḍəp:hia]	47.
			[cɪt:hia]	48.
			[ʋṭ:hia]	49.
			[sɪk:hia]	50.
			[pʊc:hia]	51.
	"	"	[buthia]	52.
			[beṭhia]	53.
			[dekhia]	54.
			[lɪkʰia]	54A
m	vcless.	vow.+voice	[napã]	55.
			[retã]	56.
			[leṭã]	57.
			[sekã]	58.
			[becã]	59.
	"	"	[chɪpã]	59A
			[ṭəp:ã]	60.
			[kət:ã]	61.
			[kʊṭ:ã]	62.
			[cʊk:ã]	63.
	"	vow.+p- vcless.	[nəc:ã]	64.
			[ḍəp:hã]	65.
			[cɪt:hã]	66.
			[ʋṭ:hã]	67.
			[sɪk:hã]	68.
			[pʊc:hã]	69.



v̄ (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.	
	STEM + SUFFIX				
m	vcless.	vow.+p- vcless.	[buthã]	70.	
			[beṭhã]	71.	
			[dekhã]	72.	
k	vcless.	plos.	[lɪkʰɛ]	72A.	
			[napke]	73.	
			[retke]	74.	
			[leṭke]	75.	
	"	vow.+voice	"	[sekke]	76.
				[becke]	77.
				[chɪpke]	77A.
				[ṭəp:əke]	78.
				[kət:əke]	79.
				[kuṭ:əke]	80.
				[cuk:əke]	81.
				[nəc:əke]	82.
				[ḍəp:həke]	83.
				[cɪt:həke]	84.
				[uṭ:həke]	85.
				[sɪk:həke]	86.
				[puc:həke]	87.
	"	plos.	[buthke]	88.	
			[beṭhke]	89.	
			[dekhke]	90.	
			[lɪkʰke]	90A.	

### 7.2.3 n - $\bar{n}$ System

It can be seen from the phonetic exponents of the c-term (7.1.2) and the f-term (7.1.3) that in one type nasality as a feature of the stem final consonant is syntagmatically associated with nasalization of a following vowel, which is initial in the initial syllable of the suffix in IA, U and E suffix interverbal junction, e.g., [cũmĩa] [mẽn:ĩa] [bẽnĩa] [cũmũ] [mẽn:ũ] [bẽnũ] [cũmẽ] [mẽn:ẽ] [bẽnẽ]. This may be contrasted with the remaining type where features other than nasality in the final consonant of the stem-final syllable are linked to non-nasalization of a following vowel which is initial in the suffix, e.g., [bolia] [phəsia] [caria] [bolu] [phəsu] [caru].

To deal with this syntagmatic relationship between the stem-final consonant and the inflexion initial vowel, a two-term prosodic system n -  $\bar{n}$  can be set up which is crosscutting for the c and the f terms of the Intraverbal Junction System. The two terms of the system are named here n (after nasality in the consonant and nasalization in a following vowel) and  $\bar{n}$  (non-n).

The phonetic exponents of n (7.2.3.1) and  $\bar{n}$  (7.2.3.2) are stated as follows:

7.2.3.1 The Phonetic exponents of n

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
d (c)	nas.	plos.+voice	[cũmda]	1.
			[tãnda]	2.
		vow.+nasaliz.	[cũm:ẽda]	3.
d (f)		" "	[mẽn:ẽda]	4.
			[jãnda]	5.
			[bẽnda]	6.
n (c)	nas.	vow.+nas.	[cũmẽnã]	7.
			[tãnẽnã]	8.
			[cũm:ẽnã]	9.
			[mẽn:ẽnã]	10.
(f)			[jãnẽnã]	11.
			[bẽnẽnã]	12.
v (c)	nas.	vow.+nas.	[cũmĩa]	13.
			[tãnĩa]	14.
			[cũm:ĩa]	15.
			[mẽnĩa]	16.
(f)			[jãnĩa]	17.
			[bẽnĩa]	18.
m (c)	nas.	vow.+nas.	[cũmã]	19.
			[tãnã]	20.
			[cũm:ã]	21.
			[mẽn:ã]	22.
(f)			[jãnã]	23.
			[bẽnã]	24.

n (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
k (c) nas.     (f)		plos.+non-nas.	[cũmke]	25.
			[tãnke]	26.
			[cũm:əke]	27.
			[mẽn:əke]	28.
			[jãnke]	29.
			[bẽnke]	30.

7.2.3.2 The Phonetic exponents of  $\bar{n}$ 

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
d (c)          (f)	oral.	plos.+ voice	[bolda]	1.
			[cəlda]	2.
			[kosda]	3.
			[phəsda]	4.
		vow.+non- nas. "	[hɪl:əda]	5.
			[həs:əda]	6.
			[meɭda]	7.
			[carda]	8.
			[paɾda]	9.
			[məɭda]	10.
			[cərda]	11.
			[muɾda]	12.



ñ (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
n (c) oral.	vow.+nas.		[bolõṇã]	13.
			[cəlõṇã]	14.
			[kosõṇã]	15.
			[phəsõṇã]	16.
			[hɪl:õṇã]	17.
			[həs:õṇã]	18.
(f)			[meḷõṇã]	19.
			[məḷõṇã]	20.
			[carnã]	21.
			[paṛnã]	22.
			[cərnã]	23.
			[muṛnã]	24.
v (c) oral.			[bolɪa]	25.
			[cəlɪa]	26.
			[kosɪa]	27.
			[phəsɪa]	28.
			[hɪl:ɪa]	29.
			[həs:ɪa]	30.
(f) oral.		oral.	[meḷɪa]	31.
			[carɪa]	32.
			[paṛɪa]	33.
			[məḷɪa]	34.
			[cəɪa]	35.
			[muṛɪa]	36.

n̄ (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
m (c)	oral.	nas.	[bolã]	37.
			[cəlã]	38.
			[kosã]	39.
			[phəsã]	40.
			[hɪl:ã]	41.
			[həs:ã]	42.
(f)			[meɭã]	43.
			[carã]	44.
			[paɾã]	45.
			[məɭã]	46.
			[cərã]	47.
			[muɾã]	48.
k (c)	oral.	plos.	[bolke]	49.
			[cəlke]	50.
			[koske]	51.
			[phəske]	52.
			[hɪl:əke]	53.
			[həs:əke]	54.
(f)			[meɭke]	55.
			[carke]	56.
			[paɾke]	57.
			[məɭke]	58.
			[cərke]	59.
			[muɾke]	60.

#### 7.2.4 r - $\bar{r}$ System

It becomes clear from the statement of phonetic exponency for ə (7.1.5) that with NA suffix the root-final features such as dentality and trill, post-alveolarity and retroflex flap, dentality and laterality and post-alveolarity and laterality and retroflexion combine with [nã] whereas features other than these combine with [ẽṇã].

To deal with this syntagmatic association of the features of the verb-root final and the suffix initial a two-term prosodic sub-system r -  $\bar{r}$  can be set up. The two terms are named r (after retroflexion, although it so happens that [r] and [l] are not retroflexed) and  $\bar{r}$  (non-r).

The phonetic exponents of r (7.2.4.1) and  $\bar{r}$  (7.2.4.2) are stated as under:

7.2.4.1 The phonetic exponents of r

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
d	trill	plos.+voice	[ṭək:ərda]	1.
	ret.+flap	" "	[cop̣ərda]	2.
	lat.	" "	[bəḍelda]	3.
	ret.+lat.	" "	[nig̣əḷda]	4.
n	trill	nas.+dent.	[ṭək:ərñã]	5.
	ret.+flap	" "	[cop̣ər̃ñã]	6.
	lat.	" "	[bəḍəl̃ñã]	7.
	ret.+lab.	" "	[nig̣əl̃ñã]	8.
v	trill	syllabic vowel	[ṭək:ria]	9.
	ret.+flap.		[cop̣əṛia]	10.
	lat.		[bəḍəḷia]	11.
	ret.+lat.		[nig̣əḷia]	12.
m	trill	vow.+nas.	[ṭək:ərã]	13.
	ret.+flap		[cop̣əṛã]	14.
	lat.		[bəḍəḷã]	15.
	ret.+lat.		[nig̣əḷã]	16.
k	trill	plos.+ vcless.	[ṭək:ərke]	17.
	ret.+flap.		[cop̣əṛke]	18.
	lat.		[bəḳəḷke]	19.
	ret.+lat.		[nig̣əḷke]	20.



7.2.4.2 The Phonetic exponents of  $\bar{r}$ 

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
d	nas.	plos.+voice	[šerəmda]	1.
	frict.		[təresda]	2.
	plos./affric.		[kələpda]	3.
			[bəretda]	4.
			[vlətɖda]	5.
			[khərekda]	6.
			[khurəcda]	7.
	plos.		[tərephda]	8.
			[pərekhda]	9.
			[séməjda]	10.
n	nas.	vow.+cent. short.+ret. +nas.	[šerəmẽṇã]	11.
	frict.		[təresẽṇã]	12.
	plos./affric.	"	[kələpẽṇã]	13.
			[bəreṭẽṇã]	14.
			[vlətẽṇã]	15.
			[khərekẽṇã]	16.
			[khurəcẽṇã]	17.
	plos.+asp.		[tərephẽṇã]	18.
			[pərekhẽṇã]	19.
	affric.+voice		[séməjẽṇã]	20.

r̄ (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
v	nas.+lab. +short.	syllabic vowel	[š̌erəṃia]	21.
	frict.+short.		[təṛəṣia]	22.
	plos./affric. +short.		[kəḷəp̣ia]	23.
			[bəṛətia]	24.
			[ṽḷəṭ̣ia]	25.
			[khəṛəḳia]	26.
			[khurəc̣ia]	27.
	plos.+asp. +short.		[təṛəpḥia]	28.
			[pəṛəkḥia]	29.
	affric.+voice +short.		[sə́məj̣ia]	30.
m	lab.+nas.+ short.	vow.+nas.	[š̌erəṃã]	31.
	frict.+vcless.		[təṛəṣã]	32.
	plos./affric. +vcless.+short.		[kəḷəp̣ã]	33.
			[bəṛətã]	34.
			[ṽḷəṭ̣ã]	35.
			[khəṛəḳã]	36.
			[khurəc̣ã]	37.
	plos.+asp. +short.		[təṛəpḥã]	38.
			[pəṛəkḥã]	39.
	affric.+voice		[sə́məj̣ã]	40.

ṛ (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS	EXAMPLES	S.No.
	STEM + SUFFIX		
k	lab.+nas.+ short.	[ṣ̣ərəmke]	41.
	frict.+vcless. +short.	[tərəske]	42.
	plos./affric. +vcless.+short.	[kəḷəpke]	43.
		[bərətke]	44.
		[vḷəṭke]	45.
		[kḥərəkke]	46.
		[kḥurəcke]	47.
	plos.+vcless. +asp.+short.	[təṛəphke]	48.
		[pərəkhke]	49.
	affric.+voice +short.	[səməjke]	50.

#### 7.2.4.3 h - ḥ

It becomes clear from the statement of phonetic exponency for the əṛ (7.2.4.2) that in v, m and k plosion and voicelessness in the root-final consonant is syntagmatically associated with partial-voicelessness combined with high-volume velocity of air-flow in the initial part of the vowel that follows (the vowel in this case being that of the initial syllable of the inflexion). This may be contrasted with other types where we find features like voice or voicelessness being associated with full voice in the following vowel.

In order to deal with this syntagmatic relationship of the root-final consonant and the suffix initial vowel, the same two-term prosodic sub-system (h -  $\bar{h}$ ) can be re-stated for  $(\bar{e})\bar{r}$  piece, as well as for the p-piece (7.2.1) with a slight difference in phonetic exponency. The two terms of the system are named h (after aspiration in the root-final consonant which is linked to partial-voicelessness and high volume velocity air-flow) and  $\bar{h}$  (non-h).

The phonetic exponents of h (7.2.4.3) and  $\bar{h}$  (7.2.4.3) are as follows:

7.2.4.3.1 The phonetic exponents of h  
 $(\bar{e})\bar{r}$ h

Type of Juncture Piece	PHONETIC EXPONENTS				EXAMPLES	S.No.
	STEM + SUFFIX					
d	plos.+vcless. plos.+voice +asp.				[təṛəphda]	1.
	"	"	"	"	[pəṛəkhda]	2.
n	plos.+vcless.vow.+p-vcless. <sup>1</sup>				[təṛəphẽṇã]	3.
					[pəṛəkhẽṇã]	4.
v	plos.+vcless, "				[təṛəphia]	5.
					[pəṛəkhia]	6.
m	"	"	"	"	[təṛəphã]	7.
					[pəṛəkhã]	8.
k	"	"	plos.+vcless,		[təṛəphke]	9.
					[pəṛəkhke]	10.

1. Partial-voicelessness in the initial part of the vowel is combined with high-volume velocity of air-flow.



7.2.4.3.2 The Phonetic exponents of  $\bar{h}$ (ə $\bar{r}$ ) $\bar{h}$ 

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
d	nas.+voice	plos.+voice	[šə <sup>ʔ</sup> rəmda]	1.
	frict.+ vcless.	" "	[tə <sup>ʔ</sup> rəsda]	2.
	plos./affric. +vcless.	" "	[kə <sup>ʔ</sup> ləpda]	3.
			[bə <sup>ʔ</sup> rətda]	4.
			[v <sup>ʔ</sup> ləṭda]	5.
			[khə <sup>ʔ</sup> rəkda]	6.
			[khurəcda]	7.
	plos.+voice	" "	[sə <sup>ʔ</sup> məjda]	8.
n	nas.+voice	vow.+voice	[šə <sup>ʔ</sup> rəməñā]	9.
	frict.+ vcless.	" "	[tə <sup>ʔ</sup> rəsēñā]	10.
	plos./affric. +vcless.		[kə <sup>ʔ</sup> ləpēñā]	11.
			[bə <sup>ʔ</sup> rətēñā]	12.
			[v <sup>ʔ</sup> ləṭēñā]	13.
			[khə <sup>ʔ</sup> rəkēñā]	14.
			[khurəcēñā]	15.
	plos.+voice		[sə <sup>ʔ</sup> məjēñā]	16.
v	nas.+voice	vow.+voice	[šə <sup>ʔ</sup> rəməia]	17.
	frict.+ vcless.	" "	[tə <sup>ʔ</sup> rəsia]	18.
	plos./affric. +vcless.	" "	[kə <sup>ʔ</sup> ləpia]	19.
			[bə <sup>ʔ</sup> rətia]	20.
			[v <sup>ʔ</sup> ləṭia]	21.

(ə̄r)h̄ (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
v			[khə̄ɾəkɪa]	22.
			[khurəciɑ]	23.
	plos.+voice		[sə́məjɪɑ]	24.
m	nas.+voice	vow.+voice	[ʃə̄rə̄mã]	25.
	frict.+ vcless.	" "	[tə̄rəsã]	26.
	plos./affric+ vcless.		[kə̄ləpã]	27.
			[bə̄rətã]	28.
			[v̄lə̄ɾã]	29.
			[khə̄ɾəkã]	30.
			[khurəcã]	31.
	affrict.+ voice		[sə́məjã]	32.
k	nas.+voice	plos.	[ʃə̄rə̄mke]	33.
	frict.+ vcless.	"	[tə̄rəske]	34.
	plos./affrict. +vcless.		[kə̄ləpke]	35.
			[bə̄rətke]	36.
			[v̄lə̄ɾke]	37.
			[khə̄ɾəkke]	38.
			[khurəcke]	39.
	affrict.+ voice		[sə́məjke]	40.

### 7.2.5. Quantity System l - s

Syntagmatic phonetic differences in the Interverbal Junction made me decide to set up a prosodic Quantity System l - s (6.2); and every p-piece and c-piece lexical item was accordingly classified as l or s. In Intra-verbal Junction the phonetic exponents of l and s are naturally once again concerned. It may happen that some of the phonetic exponents of l and s in Intra-verbal Junction are phonetically overlapping with those of the Inter-verbal Junction; still, once a lexical item has been classified as l or s, it retains that classification, and its phonetic features must be accounted for in Intraverbal Junction just as in Inter-verbal Junction.

On the basis of the syntagmatic association of features like (1) length/<sup>shortness</sup> in the vowel and shortness and plosion/affrication with or without voice in one type, and (2) shortness of vowel with length in the consonant combined with voice or voicelessness and voicelessness combined with aspiration, the two-term Quantity sub-system is applied here to the analysis of phonetic data drawn from Intraverbal Junction.

The phonetic exponents of l (7.2.5.1) and s (7.2.5.2) are stated as follows:

7.2.5.1 The phonetic exponents of l

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
d (p)	vow.+length	plos./affric.+ plos. vcless.+short. +non-asp.	[napda]	1.
			[retda]	2.
			[leṭdā]	3.
			[sekda]	4.
			[becda]	5.
			[chɪpda]	5A
			[ḍobda]	6.
			[sódḍa]	7.
			[goḍda]	8.
			[jagda]	9.
		plos./affric. +voice+short.	[bijda]	10.
			[səjda]	10A
			[buthəda]	11.
			[bṭhəda]	12.
(c)	"	lat.+short. plos.	[dekhəda]	13.
			[lɪkhəda]	13A
			[bolda]	14.
			[kosda]	15.
			[cūmda]	16.
			[tānda]	17.
			[cəlda]	18.
vow.+short.	lat.+short.	[phəsda]	19.	
	frict.+"			



1 (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.
	STEM + SUFFIX			
n (p)	vow.+length, +short., non-asp.	plos./affric.+vcless. cent.+ short.+ nas.,	[napẽṇã]	20.
			[retẽṇã]	21.
			[letẽṇã]	22.
			[sekẽṇã]	23.
			[becẽṇã]	24.
			[chɪpẽṇã]	24A
		plos./affric. +voice+short.	[ḍobẽṇã]	25.
			[sódẽṇã]	26.
			[godẽṇã]	27.
			[jagẽṇã]	28.
			[bijẽṇã]	29.
			[səjẽṇã]	29A
		plos.+vcless. +asp. +short.	[buthẽṇã]	30.
			[beṭhẽṇã]	31.
			[dekhẽṇã]	32.
			[ɪkheṇã]	32A
			[bolẽṇã]	33.
(c)	vow.+length	lat.+short.		
		frict+ "	[kosẽṇã]	34.
		nas.+ "	[cũmẽṇã]	35.
		" "	[tãnẽṇã]	36.
		vow.+short.	lat. + "	[cəlẽṇã]
		frict.+"	[phəsẽṇã]	38.

1 (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS			EXAMPLES	S.No.
	STEM + SUFFIX				
v (p)	vow.+length	plos./affric. +vcless.+ short.	syllabic vowel	[napia]	39.
				[retia]	40.
				[leṭia]	41.
				[šekia]	42.
				[becia]	43.
				[chɪpɪa]	43 A
				[ḍobia]	44.
				[sódia]	45.
				[goḍia]	46.
				[jagia]	47.
				[bijia]	48.
				[səjɪa]	48 A
				[buthia]	49.
				[beṭhia]	50.
(c)	vow.+length	lat.+short.		[dekhia]	51.
				[ɪɪkhia]	51 A
				[bolia]	52.
			frict.+"	[kosia]	53.
			nas. + "	[cũmia]	54.
			" + "	[tãnia]	55.
			vow.+short.	lat.+short.	[cəlia]
	frict.+"	[phəsia]	57.		

1 (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS			EXAMPLES	S.No.
	STEM + SUFFIX				
m (p)	vow.+length	plos./affric. +vcless+short. +non-asp.	syllabic vowel	[napã]	58.
				[retã]	59.
				[leṭã]	60.
				[sekã]	61.
				[becã]	62.
				[chɪpã]	62 A.
				[ḍobã]	63.
				[sódã]	64.
				[godã]	65.
				[jagã]	66.
				[bijã]	67.
				[səjã]	67 A
				[buthã]	68.
				[beṭhã]	69.
(c)	"	"	plos.+vcless. +asp.+short.	[dekhã]	70.
				[ɪkḥã]	70 A.
				[bolã]	71.
	vow.+short.	"	lat.+short.		
	vow.+short.	"	frict.+vcless.+ short.	[kosã]	72.
	vow.+short.	"	nas.+short.	[cũmã]	73.
	vow.+short.	"	"	[tãnã]	74.
	vow.+short.	"	lat.+short.	[cəlã]	75.
	vow.+short.	"	frict.+vcless.+ short.	[phəsã]	76.

1 (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS			EXAMPLES	S.No.		
	STEM + SUFFIX						
k (p)	vow.+length	plos./affric. short., plos. +vcless.+ short, +non- asp.		[napke]	77.		
				[retke]	78.		
				[leṭke]	79.		
				[sekke]	80.		
		plos./affric. +voice+short.	"	[becke]	81.		
				[chɪpke]	81 A .		
				[ḍobke]	82.		
				[sódke]	83.		
				[goḍke]	84.		
				[jagke]	85.		
		plos.+vcless. +asp.+short.	"	[bijke]	86.		
				[səjke]	86 A		
				[buthke]	87.		
				[beṭhke]	88.		
		(c)	vow.+length	lat.+short.	"	[dekhke]	89.
						[lɪkhke]	89 A .
						[bolke]	90.
		frict.+ "		[koske]	91.		
		nas. + "		[cũmke]	92.		
		" + "		[tānke]	93.		
	vow.+short.	lat.+short.		[cəlke]	94.		
		frict.+"		[phəske]	95.		

7.2.5.2 The phonetic exponents of s

Type of Juncture Piece	PHONETIC EXPONENTS		EXAMPLES	S.No.	
	STEM + SUFFIX				
d (p)	vow.+short.	plos/affric.+	vow.+cent.	[təp:əda]	1.
		vcless. +	+short,		
		length	plos.	[kət:əda]	2.
				[kʊt:əda]	3.
				[cuk:əda]	4.
				[nēc:əda]	5.
		plos/affric.+ vcless. + length		[dəp:həda]	6.
			[cɪt:həda]	7.	
			[ʊt:həda]	8.	
			[sɪk:həda]	9.	
			[puc:həda]	10.	
		plos/affric. +voice + length		[dʊb:əda]	11.
			[səd:əda]	12.	
			[gəd:əda]	13.	
			[ləg:əda]	14.	
			[bəj:əda]	15.	
	(c)	lat.+length		[hɪl:əda]	16.
frict.+"			[həs:əda]	17.	
nas. + "			[cũm:əda]	18.	
nas. + "			[mẽn:əda]	19.	



s (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS			EXAMPLES	S.No.				
	STEM + SUFFIX								
n (p)	vow.+short.	plos./affric. +vcless. + length	vow.+cent. +short+ nas.	[təp:ẽṇã]	20.				
				[kət:ẽṇã]	21.				
				[kut:ẽṇã]	22.				
				[cuk:ẽṇã]	23.				
				[nəc:ẽṇã]	24.				
				"	[dəp:hẽṇã]	25.			
				[cɪt:hẽṇã]	26.				
				[vɪt:hẽṇã]	27.				
				[sɪk:hẽṇã]	28.				
				[puc:hẽṇã]	29.				
				"	"	plos./affric. +voice + length	cent.+ short.	[ɖub:ẽṇã]	30.
				[səd:ẽṇã]	31.				
				[gəd:ẽṇã]	32.				
				[ləg:ẽṇã]	33.				
				[bəj:ẽṇã]	34.				
(c)		lat.+length		[hɪl:ẽṇã]	35.				
		frict.+vcless. +length		[həs:ẽṇã]	36.				
		nas.+length		[cũm:ẽṇã]	37.				
		nas.+ length		[mẽn:ẽṇã]	38.				

s (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS			EXAMPLES	S.No.	
	STEM + SUFFIX					
v (p)	vow.+cent. +short.	plos./affric. +length	syllabic vowel	[təp:ia]	39.	
				[kət:ia]	40.	
				[kʊt:ia]	41.	
				[cʊk:ia]	42.	
				[nəc:ia]	43.	
				"	[dəp:hia]	44.
				[cɪt:hia]	45.	
				[ʊt:hia]	46.	
				[sɪk:hia]	47.	
				[pʊc:hĩa]	48.	
				"	[dʊb:ia]	49.
				[səd:ia]	50.	
				[gəd:ia]	51.	
				[ləg:ia]	52.	
				[bəj:ia]	53.	
(c)		lat.+length		[hɪl:ia]	54.	
		frict.+vcless. +length		[həs:ia]	55.	
		nas.+length		[cũm:ia]	56.	
		nas.+ length		[mẽn:ia]	57.	

s (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS			EXAMPLES	S.No.			
	STEM + SUFFIX							
m (p)	vow.+short.	plos./affric. +vcless.+ length	syllabic vowel	[təp:ã]	58.			
				[kət:ã]	59.			
				[kʊt:ã]	60.			
				[cʊk:ã]	61.			
				[nəc:ã]	62.			
				"	[dəp:hã]	63.		
					[cɪt:hã]	64.		
					[ʊt:hã]	65.		
					[sɪk:hã]	66.		
					[pʊc:hã]	67.		
					plos./affric. +voice+length	ʔdub:ã]	68.	
						[səd:ã]	69.	
				(c)	lat.+length	frict.+vcless. +length	[gəd:ã]	70.
							[ləg:ã]	71.
[bəj:ã]	72.							
[hɪl:ã]	73.							
[həs:ã]	74.							
[cũm:ã]	75.							
	nas.+length	"	"	[mẽn:ã]	76.			

s (contd.)

Type of Juncture Piece	PHONETIC EXPONENTS			EXAMPLES	S.No.
	STEM + SUFFIX				
k (p)	vow.+short.	plos/affric. +length	vow.+cent. +short, plos.	[ṭəp:əke]	77.
				[kət:əke]	78.
				[kʊṭ:əke]	79.
				[cʊk:əke]	80.
				[nəc:əke]	81.
		plos./affric. +asp. +length	[ḍəp:həke]	82.	
			[cɪt:həke]	83.	
			[ʊṭ:həke]	84.	
			[sɪk:həke]	85.	
			[pʊc:həke]	86.	
		plos./affric. +length	[ḍʊb:əke]	87.	
			[səd:əke]	88.	
			[gəḍ:əke]	89.	
			[ləg:əke]	90.	
			[bəj:əke]	91.	
(c)	lat.+length	[hɪl:əke]	92.		
		frict.+vcless. +length	[həs:əke]	93.	
		nas.+length	[cũm:əke]	94.	
		" "	[m̃ən:əke]	95.	

## CHAPTER VIII

### 8.0 PHONEMATIC SYSTEMS:

An account of the Phonematic Systems set up for the verb-root syllable will be found in this chapter. Certain phonematic systems have already been stated; these are the C-systems stated in (5.5.1) and (5.5.2) for the p and the  $\bar{p}$  (non-p) terms of the prosodic system set up for the syllable-initial of the initial syllable.

-C Phonematic Systems remain to be stated; and this is the most logical place to state them following on those prosodic systems which apply to the syllable-final piece of the root-final syllable.

Last come the V Phonematic Systems; this is the most appropriate order for them because they are affected by the syllable-final piece prosodic systems as well as by the syllable-initial piece prosodic systems. Furthermore, V systems as recognised for the suffixes and a different V system for the Auxiliary sub-category of Verb have also been included in this chapter.

8.1 SYLLABLE FINAL -C SYSTEMS: The following nine -C systems have been set up for the different prosodic types of piece that concern the syllable-final of the root-final piece. The gaps that are to be found are treated here as accidental rather than structurally significant.

The phonematic -C Systems are:

1. A Five-term System for p, (whether h or  $\bar{h}$ , v or  $\bar{v}$ , l or s) (8.1.1).
2. A Two-term System for c  $\bar{n}$  l, c  $\bar{n}$  s (8.1.2).



3. A Two-term System for c n l, c n s (8.1.3).
4. A Five-term System for k (8.1.4).
5. A Three-term System for f  $\bar{n}$  (8.1.5).
6. A Four-term System for ə r (8.1.6).
7. An Eight-term System for ə  $\bar{r}$   $\bar{h}$  (8.1.7).
8. A Two-term System for ə r h (8.1.8).
9. A Nineteen-term System for the penultimate consonant of ə r and ə  $\bar{r}$  (8.1.9).

Only those features have been specified for each Phonematic Unit that serve to distinguish it paradigmatically ~~from~~ other terms in its system. The number of such features is generally small, for a number of features of sounds in question have already been stated while dealing with the phonetic exponents of a prosodic term appropriate to the type, or types of piece for which the terms of the Phonematic System are stated. Thus in dealing with the phonetic exponents of B, one of the five terms in the Phonematic System appropriate to the k-piece, only labiality and plosion need to be specified in order to distinguish the B from D,  $\bar{D}$ , G and J terms; such other features as the nasalization of vowel [ə] in e.g., [k $\tilde{m}$ b], the voice feature of [mb], and the nasality of the [m] are all part of the exponency of the k prosodic term.

8.1.1 Five-term Phonematic -C System for p(p $\bar{h}\bar{v}$ l, p( $\bar{h}$ )vl, ph( $\bar{v}$ )l, p $\bar{h}\bar{v}$ s, p( $\bar{h}$ )vs, ph( $\bar{v}$ )s)

S.No.	Phonematic Unit	Phonetic Exponents	Examples					
			p $\bar{h}\bar{v}$ l	p( $\bar{h}$ )vl	ph( $\bar{v}$ )l	p $\bar{h}\bar{v}$ s	p $\bar{h}$ vs	ph( $\bar{v}$ )s
1.	P	lab.+plos.	[nap	ḍob	ləph	ṭəp:ə	ḍub:ə	ḍəp:hə]
2.	T	dent.+non-ret.+plos.	[ret	sód	buth(ə)	kət:ə	səd:ə	cɪt:hə]
3.	ṭ	post-alv.+ret.+plos.	[leṭ	god	bəṭh(ə)	kuṭ:ə	gəḍ:ə	uṭ:hə]
4.	K	vel.+plos.	[sek	jag	dekh(ə)	cuk:ə	ləg:ə	sɪk:hə]
5.	C	palato-alv.+affrict.	[bec	bij	bɪtʃ	nec:ə	bəj:ə	puc:hə]

8.1.2 Two-term Phonematic -C System for c $\bar{n}$ l, c $\bar{n}$ s.

S.No.	Phonematic Unit	Phonetic Exponents	Examples		
			c $\bar{n}$ l		c $\bar{n}$ s
1.	L	dent.+lat.+voice	[ bol	cəl	hɪl:ə]
2.	S	alv.+frict.+vcless.	[ kos	phəs	həs:ə]

8.1.3 Two-term Phonematic -C System for cnl, cns.

S.No.	Phonematic Unit	Phonetic Exponents	Examples	
			cnl	cns
1.	M	lab.	[ cūm	cūm:ə]
2.	N	dent.	[ tãn	mẽn:ə]

8.1.4 Five-term Phonematic -C System for k

S.No.	Phonematic Unit	Phonetic Exponents			Examples
1.	B	lab.	-	plos.	[kẽmb]
2.	D	dent.	non-ret.	plos.	[rẽnd]
3.	Ḑ	post-alv.	ret.	plos.	[cẽṇḑ]
4.	G	vel.	-	plos.	[tẽṅg]
5.	J	palato-alv.	-	affrict.	[pĩɲj]

8.1.5 Three-term Phonematic -C System for f ñ

S.No.	Phonematic Unit	Phonetic Exponents		Examples
1.	R	dent.+trill+non-ret.		[ car cər ]
2.	Ṛ	palat.+flap+ret.		[ paṛ muṛ ]
3.	Ḍ	post-alv. lat. ret.		[ meḷ məḷ ]

8.1.6 Four-term Phonematic C-system for ər

S.No.	Phonematic Unit	Phonetic Exponents		Examples
1.	R	dent.	trill non-ret.	[tək:ər]
2.	Ṛ	palat.	flap ret.	[copər]
3.	L	dent.	lat. non-ret.	[bədəl]
4.	Ḍ	post-alv.	lat. ret.	[nigəḷ]

8.1.7 Eight-term Phonematic -C System for ə r̄ h̄

S.No.	Phonematic Unit	Phonetic Exponents	Examples
1.	M	lab.+nas.+voice	[šerəm]
2.	S	alv.+frict.+vcless.	[təres]
3.	P	lab.+plos.+vcless.	[kəlep]
4.	T	dent.+ " "	[berət]
5.	ṭ	post-alv.+ret.+plos.+vcless.	[vḷəṭ]
6.	K	vel.+plos.+vcless.	[khəṛək]
7.	C	palato-alv.+affrict.+vcless.	[khurəc]
8.	J	palato-alv.+affric.+voice	[séməj]

8.1.8 Two-term Phonematic -C System for ə r̄ h̄

S.No.	Phonematic Unit	Phonetic Exponents	Examples
1.	P	lab.+vcless.+asp.	[təṛəph]
2.	K	vel.+vcless.+asp.	[pəṛəkh]

8.1.9 Nineteen-term Phonematic -C System for the penultimate consonant of ər and ēr (h - ĥ).

S.No.	Phonematic Unit	Phonetic Exponents			Examples	
					ər	ēr
1.	P	lab.	plos.	vcless.	[copər]	[cipək]
2.	B	lab.	plos.	voice	[lib:ər]	[tébək]
3.	T	dent.	plos.	non-ret. +vcless.	[ut:ər]	[ - ]
4.	D	dent.	plos.	non-ret. +voice	[odər]	[bɪdək]
5.	Ṭ	post- alv.	plos.	ret.+ vcless.	[biṭər]	[pəṭək]
6.	Ḍ	"	plos.	ret.+ voice	[ - ]	[ - ]
7.	K	vel.	plos.	vcless.	[muk:ər]	[ - ]
8.	G	vel.	plos.	voice	[niɡəl]	[ - ]
9.	C	palato- alv.	affric.	vcless.	[bicər]	[picək]
10.	J	"	"	voice	[uj:ər]	[cɪjək]
11.	M	lab.	nas.	voice	[simər]	[cəmək]
12.	N	dent.	nas.	non-ret.+ voice	[ - ]	[ - ]
13.	Ṇ	post- alv.	nas.	ret.+ voice	[ - ]	[sinək]
14.	R	dent.	trill	non-ret.+ voice	[dərər]	[bəreṭ]
15.	Ṛ	post- alv.	flap	ret.+ voice	[ - ]	[khərək]
16.	L	dent.	lat.	non-ret. +voice	[khɪl:ər]	[bɪlək]
17.	Ḷ	post- alv.	lat.	ret.+ voice	[ - ]	[kələp]
18.	S	alv.	frict.	vcless.	[bisər]	[kusek]
19.	Š	palat.	frict.	vcless.	[ - ]	[mušək]



8.2 Phonematic V Systems: After having dealt with all those features that are syntagmatically associated with the syllable-initial of the initial syllable and the syllable-final of the final syllable of the various types of verb-root, there still remain some paradigmatic distinctions that are to be accounted for. The following Phonematic V Systems have been set up here for the purpose. Separate V Systems have to be set up to reflect all the prosodic distinctions that have already been made for the Initial System of the syllable-initial piece (5.5) ( $p-\bar{p}$ ,  $h-\bar{h}$ ,  $v-\bar{v}$ ,  $n-\bar{n}$ ) and the syllable-final piece ( $cnl$ ,  $c\bar{n}l$ ,  $k$ ,  $fn$ ,  $f\bar{n}$ ,  $ph\bar{v}s$ ,  $ph\bar{v}l$  etc.). As already stated above (8.1) the gaps are treated here as accidental rather than systematic.

8.2.1 A ten-term Phonematic V System is recognised for those types of the verb-root which have been classified as  $k$ ,  $fn$ ,  $f\bar{n}$ ,  $\text{er}$  or  $\text{e}\bar{r}$  (syllable-final of the root-final syllable). The ten terms of the system and their phonetic exponents are as follows:

S.No.	Phonematic Unit	Phonetic Exponents	Examples
1.	ɪ	close.+front.+unround+length	[cir] [bir]
2.	ʊ	close.+back+round+length	[pur] [gũnj]
3.	E	half-close.+front.+unround+length	[ker] [geɾ]
4.	O	half-close.+back+round+length	[tor] [joɾ]
5.	ɛ	half-open.+front.+unround+length	[léɾ] [dẽmber]
6.	ɔ	half-open.+back+round+length	[põcəl] [bóɾ]
7.	A	open.+neutral.+unround+length	[mar] [jãɾ]
8.	ɪ	half-close.+front.+centraliz.+short.	[mɪɪ] [gĩɾ]
9.	ə	half-open.+central.+short.	[tər] [dər]
10.	ʊ	half-close.+back+centraliz.+short.	[mʊɾ] [jʊɾ]

8.2.2 The system given above (8.2.1) is appropriate to the  $\bar{h}$  (non-h) prosodic type of the Initial piece, in which all ten types of vowel are distinguished; it so happens that there is only an eight-fold differentiation in types of vowel for those types of the verb-root that have been classified as  $ph(\bar{v})$  (syllable-initial of the initial syllable) and  $k, fn, f\bar{n}, er,$  or  $e\bar{r}$  (syllable-final of the final syllable), but the absence of the close front unrounded and half-open back rounded types of vowel from this type of verb-root piece is taken to be accidental; examples of them are to be found in Nouns.

The phonetic exponents of the <sup>of the ten-term</sup> eight-terms/V system are as follows:

S.No.	Phonematic Unit	Phonetic Exponents	Examples
1.	U	close.+back+round.+length	[thũng]
2.	E	half-close.+front.+unround.+length	[pher]
3.	O	half-close.+back.+round.+length	[khor]
4.	ε	half-open.+front.+unround.+length	[thér]
5.	A	open.+neutral.+unround.+length	[chãp]
6.	ɪ	half-close.+front.+centraliz+short.	[phir]
7.	ə	half-open+central.+short.	[phər]
8.	ʊ	half-close.+back+centraliz.+short.	[thur]

8.2.3 A ten-term Phonematic V system has been set up here for the types of verb-root classified as  $p\bar{h}\bar{v}$  or  $\bar{p}$  (syllable-initial of the initial syllable) and  $p\bar{h}\bar{v}\bar{l}$ ,  $p(\bar{h})v\bar{l}$ ,  $ph(\bar{v})\bar{l}$  or  $c\bar{n}\bar{l}$ . The ten different terms of the System and their phonetic exponents may be stated as follows:

S.No.	Phonetic Unit	Phonetic Exponents	Examples
1.	ɪ	close+front.+unround+length	[cik]
2.	U	close-+back.+round.+length	[sut]
3.	E	half-close+front.+unround.+length	[leɪ]
4.	O	half-close.+back+round.+length	[kòɪ]
5.	ɛ	half-open.+front.+unround.+length	[tɛɪ]
6.	ɔ	half-open.+back.+round.+length+nas.	[pɔ̃c]
7.	A	open.+neutral.+length	[càk]
8.	ɪ	half-close.+front.+centraliz.+short.	[mɪɪ]
9.	ə	half-open+central.+short.	[cəl]
10.	u	half-close.+back.+centraliz.+short.	[lɪk]

8.2.4 It so happens that only a nine-fold differentiation is possible with an accidental gap of one for those types of verb-root which have been classified as  $p(\bar{h})v$  (syllable-initial of the initial syllable) and  $p\bar{h}\bar{v}l$ ,  $p(\bar{h})vl$ ,  $ph(\bar{v})l$  or  $c\bar{n}l$  (syllable-final of the final syllable). The phonetic exponents, symbols and examples of these are as follows:

S.No.	Phonematic Unit	Phonetic Exponents	Examples
1.	ī	close.+front.+unround.+length	[bij]
2.	U	close.+back+round.+length	[júj]
3.	E	half-close.+front.+unround+length	[dekh]
4.	O	half-close.+back.+round.+length	[dɔb]
5.	ɛ	half-open+front.+unround.+length	[beṭh]
6.	A	open.+neutral+unround.+length	[jag]
7.	ɪ	half-close.+front.+centraliz.+short.	[bɪk]
8.	ə	half-open+central.+short.	[bəṣ]
9.	ʊ	half-close.+back.+centraliz.+short.	[juṭ]

8.2.5 An eight-fold differentiation with an accidental  $\text{a}$  gap of two vowels is found for the types of verb-root classified as  $\text{ph}(\bar{v})$  (syllable-initial of the initial syllable) and  $\text{ph}\bar{v}\bar{l}$ ,  $\text{p}(\bar{h})v\bar{l}$ ,  $\text{ph}(\bar{v})\bar{l}$  or  $\text{c}\bar{n}\bar{l}$  (syllable-final of the final syllable).

The phonetic exponents of the eight possibilities from this ten-term system are as follows:

S.No.	Phonematic Unit	Phonetic Exponents	Examples
1.	U	close.+back+round.+length	[phuk]
2.	E	half-close.+front.+unround.+length	[khéḷ]
3.	O	half-close.+back.+round.+length	[khóḷ]
4.	ɛ	half-open.+front+unround.+length	[phɛḷ]
5.	A	open+neutral+unround.+length	[thap]
6.	ɪ	half-close.+front.+centraliz.+short.	[chɪp]
7.	ə	half-open.+central.+short.+neutral,	[phəs]
8.	ʊ	half-close.+back.+centraliz.+short. +round.	[phuk]



8.2.6 Ten-term system for the Main Verb in the o-piece: A ten-term V (phonematic) system has been recognised for those types of the verb-root that have been classified as o (syllable-final of the final syllable). The ten terms of the system with their phonetic exponents and examples may be stated as under:

S.No.	Phonematic Unit	Phonetic Exponents	Examples
1.	ɪ	close., front, unround., oral.	[jɪ]
2.	U	close., back., round., oral.	[lú]
3.	E	Half-close, frnt., unround., oral.	[de]
4.	O	half-close, back., round., oral.	[co]
5.	ɛ	half-open, front, unround., oral.	[pɛ]
6.	ɔ	half-open, back., round., oral.	[ ]
7.	A	open, back., unround., oral.	[ga]
8.	ĩ	close, front., unround., nasaliz.	[sĩ]
9.	ẽ	half-close, front., unround., nasaliz.	[pẽ]
10.	õ	half-open, back., round., nasaliz.	[sõ]

There are no syntagmatic grounds for treating the nasalized vowel forms [ĩ, ẽ, õ] any differently from the oral vowel finals in the o-piece Main verb roots. Therefore, this ten-term -V system seems to be the best way out of the dilemma.

It is interesting that there are only four such verbs and three of these have voiceless plosion with length in the v-piece where the suffix is ɪA: [sit:a, sūt:a, pēt:a], the fourth [põ] is regular having [põia].

An alternative to this would be to establish a separate system for the nasalized vowel finals from the oral vowel finals. But there is no warrant for doing any such thing from the Intra-verbal Junction behaviour of the nasalized vowel finals in the v-type of Juncture piece:

[sĩ - s̃e, pẽ - pẽ(w)e, sõ - s̃e].

If this alternative were to be followed, then the problem of how many terms to recognize in the phonematic V system would arise. Only three vowel qualities are distinguished for this type of verb ([ĩ, ẽ, õ]), but in Nouns a seven-fold degree of distinction is made. Should the number of terms in the system be three since the distinction in the verbs is three-fold only, or should it be assumed that the system comprises the same seven terms as can be distinguished in Nouns:

[ĩ - cĩ, ẽ - s̃e, ẽ - m̃e, ă - gă, õ - jõ, õ - t̃õ, ũ - r̃ũ].

But it would be extremely odd to have a system in which there were more gaps assumed to be accidental than there were terms that could be supported from examples (three only).

8.2.7 A three-term V Phonematic System has been set up here for the types of verb root that have been classified as s (of both Final types: p and c). The three terms of the system and their phonetic exponents are stated as follows:

S.No.	Phonematic Unit	Phonetic Exponents	Examples
1.	i	half-close.+front.+centraliz.+ unround.	[míd:ə]
2.	ə	half-open+central.+neutral.	[dəb:ə]
3.	u	half-close.+back+centraliz.+round.	[cũm:ə]

The relationship of the different types of syllable initial piece and syllable final piece to the range of vowel quality may be summarised as follows:

Syllable initial type of piece	i	U	E	O	ε	ɔ	A	ɪ	ə	ʊ	Syllable final type of piece
1. $\overline{phv}$ or $\overline{p}$	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	k, fn, $\overline{fn}$ , er or $\overline{er}$
2. $p(\overline{h})v$	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
3. $ph(\overline{v})$	x	✓	✓	✓	✓	x	✓	✓	✓	✓	
4. $\overline{phv}$ or $\overline{p}$	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	$\overline{phv}l$ , $p(\overline{h})vl$ , $ph(\overline{v})l$ , $\overline{cn}l$ .
5. $p(\overline{h})v$	✓	✓	✓	✓	✓	x	✓	✓	✓	✓	
6. $ph(\overline{v})$	x	✓	✓	✓	✓	x	✓	✓	✓	✓	
7. $\overline{phv}$ , $p(\overline{h})v$ , $ph(\overline{v})$ or $\overline{p}$	x	x	x	x	x	x	x	✓	✓	✓	$\overline{phvs}$ , $p(\overline{h})vs$ , $ph(\overline{v})s$ , $\overline{cns}$ , $\overline{cns}$ .

8.3 SUFFIXES: PHONEMATIC SYSTEM: The suffixes have already been dealt with in part in the course of stating the Final System as it applies to Intraverbal Junction (7.1) and there are no further prosodic statements to be made.

As far as the Phonematic Analysis is concerned the types of vowel that can occur are the following: [i, e, a, o, u]. Phonetically all five are relatively long and have the qualities that elsewhere in dealing with the o-piece are associated with l-quantity lexical items. But there are two important differences when these suffix-final vowels are compared with those of the root. On the one hand, the degree of vowel differentiation seems to be limited to these five as against seven that were established for the o-piece type of root, and secondly, the Quantity System that forms part of the analysis of root syllables cannot apply here.

Another type of suffix that must also be accounted for has a sequence of two vowels [i] and [ã] as in [kərdiã]. The nasalized long vowel [ã] has no grounds to be treated differently from the above five oral vowels.

Therefore, a six-term (phonematic)-V system is recognised for the suffix: I, E, A, O, U, Ñ, the phonetic exponents of which are as follows:

S.No.	Phonematic Unit	Phonetic Exponents	Examples
1.	ɪ	close, front, unround., oral.	[kərɪ]
2.	E	half-close, front, unround., oral.	[lɛrɛ]
3.	A	open, back, unround., oral.	[dərɒ]
4.	O	half-close., back,, round, oral.	[jɒ]
5.	U	close., " " "	[pəru]
6.	Ã	open., back., unround., nasaliz.	[kərɪã]

Some of these Phonematic Units have important grammatical functions. These functions are:

- ɪ      feminine, singular.
- E      Masculine, plural
- A      Masculine, singular.
- Ã      Feminine, plural.

Three of the above vowels, i.e., ɪ, E, A account for three of the inflexional possibilities [di, de, da]; the fourth [iã] can also be associated as far as vowel of its first syllable is concerned with that same ɪ phonematic unit and the nasalized vowel of the second syllable can be associated with Ã phonematic unit.



8.4 THE AUXILIARY: The range of forms for the Auxiliary sub-category of Verb is very limited: only three [ã, a, si].<sup>1</sup>

As far as the initial consonant [s] of the form [si] is concerned, there are no grounds for doing other than associate it with the same sound in the syllable initial of the Main Verb root [sɔ̃, sɪk:hə, sũŋ, sĩŋək] etc. and analyse it as an example of S (5.5.2) with its phonetic exponents - alveolarity, friction and voicelessness.

V System: The three-fold vowel distinction is less easily disposed of. It is not possible to point to a syllable-final [a] in a Main verb root. [ĩ, ẽ, ɔ̃] occur but only in four lexical items (8.3). Since this nasalized open vowel form is without a parallel in Main Verb lexical items it seems best to treat this vowel independently of the Main verb. Once this has been decided on the same treatment should be extended to the types of vowels that contrast with it [a] and [i]. A three-term Phonematic V System is accordingly established for the Auxiliary Verb with phonetic exponents as follows:

S.No.	Phonematic Unit	Phonetic Exponents	Examples
1.	I	close., front., oral.	[si]
2.	A	open., back., oral.	[a]
3.	Ã	open., back., nasaliz.	[ã]

1. See Appendix III.

8.5 The Particles: I think it would be wasteful to analyse Verb-particle words independently of the various kinds of verb word occurring in the Verbal Phrase if they can be accommodated to the analysis of the verb words without difficulty.

The Negative Particles [na], [nǎĩ]: Prosodic Analysis.

The negative particle [na] can be treated as an example of Tone-2. As far as its syllable-initial features are concerned it shows the same  $\bar{p}$  type of syntagmatic relationship as has been observed for na 'bathe' (apart from pitch and phonation). It shares with o-piece verbs the final vowel ([a]); but naturally, for a particle, the classification 'o-piece' has none of the implications that it has for verbs: occurrence in Intra verbal Junction (in the d, n, v, m, k types of piece, pp. 157-161).

As far as the tone goes [nǎĩ] has the same pitch as a Tone-3 Noun word such as [kái] 'spade' or Tone-3 Verb word [kái] 'said' (fem.). The first syllable can be treated as an example of the  $\bar{p}$  syllable-initial piece comparable to the first syllable of [nəpɪr] 'grind', i.e. nasality, fully voiced vowel (p. 98). As far as the final vowel is concerned [nǎĩ] shares characteristics of the o-piece in Interverbal Junction, and that Junction piece only, namely vow. + nasalization; and the nasalization extends to the preceding vowel ([ə])( as in the Noun word [dǎĩ] 'curd').

Phonematic Units: The [n] of [nǎ] can be treated as an example of the phonetic exponency of the N term of the phonematic system set up for the  $\bar{p}$  Initial piece: nasality, dentality, voice (cf. p. 112, e.g. [nəp]); and its vowel can, similarly, be treated as exemplifying the phonetic exponency of the A term set up for the o piece: open, back, unrounded, oral (cf. p. 212, e.g. [ga]).

The [n] of [nǎĩ] can be associated with the N term of the C-system of the  $\bar{p}$ -Initial piece, N, M, L, R, S, Š, and H applicable to the first, or weak, syllable of disyllabic verbs, such as [nəpɪr, mɪtar, lətar, rəca, səkhaɪ, Šəgar, həkar]. The [ə] corresponds well to the phonetic exponents of the ə term of the three-term system ɪ, ə, U stutable for the first, or weak, syllable of verb examples of the type just referred to, e.g. [nɪtar, nəber, mɪtar]. [ĩ] has been associated above with the o-piece final system, which has a phonematic unit  $\tilde{ɪ}$  e.g. [sĩ] (p. 213).

Emphatic Particle: The emphatic particle [i] occurs in Nominal Phrases equally with Verbal Phrases, e.g.:

- |                          |  |
|--------------------------|--|
| 1. óda i munda mǎria si. | 'It was <u>his</u> son that died.'       |
| 2. mera i pǎrà aya si.   | 'It was <u>my</u> brother who had come.' |
| 3. koṛa i pǎjia si.      | 'It was <u>the horse</u> that was sent.' |

So it would be reasonable to take the phonology of the Nominal Phrase into account as well as that of the Verbal Phrase before subjecting it to phonological analysis.

APPENDIX - I

Main Verbs: p-initial lexical item

P-initial piece

<u>Verb Stem</u>	<u>na/na form</u>	<u>English Translation</u>
<u>p<sup>h</sup>v</u>		
<u>Tone - 1:</u>		
1. pèbək	pèbəkǝṇǎ	to be teased
2. pèkh	pèkhǝṇǎ	- be burnt
3. pəkha	pəkħǝṇǎ	- kindle
4. pǝk	pǝkǝṇǎ	- bark
5. pòg	pògǝṇǎ	- endure
6. pùgət <sup>1</sup>	pùgətǝṇǎ	- attend
7. pugtà	pugtòṇǎ	- execute
8. pùk:	pùk:ǝṇǎ	- sprinkle
9. pèj	pèjǝṇǎ	- send
10. pìj:	pìj:ǝṇǎ	- be soaked
11. pùj:	pùj:ǝṇǎ	- be parched
12. pìt:	pìt:ǝṇǎ	- pollute
13. pòt	pòtǝṇǎ	- snatch
14. pèn:	pèn:ǝṇǎ	- break
15. pənà	pənǝṇǎ	- cause to be broken
16. pèṇḍ	pèṇḍǝṇǎ	- slander
17. pìṇək	pìṇkǝṇǎ	- buzz
18. pùn:	pùn:ǝṇǎ	- parch
19. punà	punǝṇǎ	- cause to be parched
20. pùl:	pùl:ǝṇǎ	- forget
21. pulà	pulǝṇǎ	- cause to forget

1. The forms in Appendices I-II are in the systematic transcription referred to on pp. 13-16, and in the footnote on p. 85; pùgət for [pùḡət].

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22. pṽr	pṽrnā	to be broken
23. pṽr	pṽrnā	- fill
24. pṽr	pṽrnā	- shell
25. pṽr	pṽrnā	- fight
26. pṽra	pṽrṽnā	- cause to fight
27. pṽra	pṽrṽnā	- teach
28. pṽrək	pṽrkṽnā	- be incited
29. pṽrka	pṽrkṽnā	- incite
30. pṽrəm	pṽrṽmṽnā	- go astray
31. pṽrmā	pṽrmṽnā	- lead astray
32. pṽ:sər	pṽ:sərnā	- be puffed with rage
33. pṽj:	pṽj:ṽnā	- flee

Tone - 2:

1. pa	pṽnā	- put in
2. pi	pṽnā	- drink
3. pe	pṽnā	- lie down
4. pətɪa	pətɪṽnā	- coax
5. pɪt:	pɪt:ṽnā	- cry
6. pət:	pət:ṽnā	- dig
7. pətək	pətəkṽnā	- thump
8. poc	pocṽnā	- smear
9. pəc	pəcṽnā	- be digested
10. pəca	pəcṽnā	- digest
11. puckar	puckarnā	- caress
12. pɪcək	pɪckṽnā	- be squeezed



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13. p <sub>1</sub> ck <sub>1</sub> a	p <sub>1</sub> ckōñã	to squeeze
14. p <sub>1</sub> c	p <sub>1</sub> cōñã	- tie hard and tight
15. pəchan	pəchanōñã	- recognise
16. pəchta	pəchtōñã	- repent
17. pu:j	pu:jōñã	- worship
18. puc:h	puc:hōñã	- ask
19. pək:	pək:ōñã	- ripen
20. pəka	pəkōñã	- cook
21. pug:	pug:ōñã	- be completed
22. puḡa	pugōñã	- complete
23. pūñ	pūñōñã	- strain
24. pīj	pījōñã	- card cotton
25. pəḷa	pəḷōñã	- cause to drink
26. pəḷt	pəḷtōñã	- return
27. pəḷṭa	pəḷṭōñã	- overthrow
28. pəḷos	pəḷosōñã	- stroke
29. pal	palōñã	- bring up
30. pərgəṭ	pərgəṭōñã	- appear
31. pərgṭa	pərgṭōñã	- cause to appear
32. pərekh	pərkhoñã	- test
33. pəreç	pəreçōñã	- be entertained
34. pərca	pərcōñã	- entertain
35. paṛ	paṛnã	- tear
36. piṛ	piṛnã	- crush sugarcane
37. pəṛa	pəṛōñã	- cause to be crushed
38. pu:r	pu:rñã	- fill
39. pəsər	pəsərnã	- be spread
40. pəsar	pəsarnã	- extend



p̄hv

Tone - 3

1. pí	píṇã	to grind
2. pén	pénṇã	- adorn clothes
3. pōc	pōcṇã	- arrive
4. pēr	pérṇã	- read
5. pū:j	pū:jṇã	- wipe
6. pərbód	pərbódṇã	- enlighten

.. . Main Verbs: p-initial lexical item

P-initial piece

ph

Tone - 2:

1. phəb:	phəb:ẽṇã	to look well
2. phək:	phək:ẽṇã	- swallow dry
3. phɛl	phɛlẽṇã	- be scattered
4. phəɾ	phəɾṇã	- seize
5. pher	phernã	- cause to revolve
6. phir	phirnã	- wander
7. phəɾək	phəɾkẽṇã	- flutter
8. phərol	phərolẽṇã	- search
9. phẽṇḍ	phẽṇḍẽṇã	- cheat
10. phərma	phərmõṇã	- tell
11. phəɾkar	phəɾkarnã	- rebuke
12. phəs	phəsẽṇã	- be entangled
13. phəsa	phəsõṇã	- ensnare
14. phis:	phis:ẽṇã	- burst
15. phit:	phit:ẽṇã	- be spoiled
16. phol	pholẽṇã	- dig up
17. phudək	phudəkẽṇã	- hop
18. phul:	phul:ẽṇã	- swell
19. phula	phulõṇã	- inflate
20. phur	phurnã	- come to mind
21. phut:	phut:ẽṇã	- burst
22. phũṇḍ	phũṇḍẽṇã	- shoot at a mark
23. phukar	phukarnã	- hiss
24. phu:k	phu:kẽṇã	- burn

phTone - 3:

1. phé

phénã

to crush

2. phá

phónã

- entangle

Main Verbs: p-initial lexical itemP-initial piecepvTone - 2:

1. bəc	bəcẽṇã	to stay away
2. bæca	bəcõṇã	- save
3. bec	becẽṇã	- sell
4. boc	bocẽṇã	- catch
5. beṭh	beṭhẽṇã	- sit
6. bich	bichẽṇã	- be spread
7. bij	bijẽṇã	- sow
8. baḷ	baḷẽṇã	- burn
9. bədəl	bədəlṇã	- change
10. bəḍla	bəḍlõṇã	- cause to alter
11. bol	bolẽṇã	- speak
12. bũṇ	bũṇẽṇã	- weave
13. bẽṇ	bẽṇẽṇã	- become
14. bəḡ	bəḡẽṇã	- flow
15. bəs	bəsẽṇã	- settle
16. bəḍia	bəḍiõṇã	- praise
17. bəḡəḷ	bəḡəḷẽṇã	- enclose
18. bəja	bəjõṇã	- play an instrument
19. bək	bəkẽṇã	- talk nonsense
20. bəka	bəkõṇã	- cause to divulge
21. bəkhəš	bəkhšẽṇã	- forgive
22. bẽṇḍ	bẽṇḍẽṇã	- distribute
23. bǎḡ	bǎḡẽṇã	- grease
24. bar	barnã	- sacrifice
25. bərəs	bərsẽṇã	- rain

26. bərsa	bərsōṇā	to cause to rain
27. bəreṭ	bərtōṇā	- use
28. bəsa	bəsōṇā	- cause to settle
29. bəṭa	bəṭōṇā	- exchange
30. bəṭ:	bəṭ:ōṇā	- twist
31. bel	belōṇā	- roll
32. bīcəl	bīcəlōṇā	- be spoiled
33. bəcar	bəcarnā	- consider
34. bīcər	bīcərnā	- travel
35. bīchər	bīchərnā	- be separated
36. bīchoṛ	bīchorṇā	- separate
37. bīcha	bīchōṇā	- make bed
38. bīgəṛ	bīgərnā	- be spoiled
39. bīgar	bīgarṇā	- spoil
40. bīja	bījōṇā	- cause to be sown
41. bīka	bīkōṇā	- cause to be sold
42. bīkhər	bīkhərnā	- be scattered
43. bīkhra	bīkhrōṇā	- scatter
44. bīlək	bīlkōṇā	- sob
45. bīlka	bīlkōṇā	- cause to sob
46. bīphər	bīphəṛṇā	- be angry
47. bīraj	bīrajōṇā	- grace a seat
48. bīsər	bīsərnā	- be forgotten
49. bīsar	bīsarnā	- forget
50. bīsma	bīsmōṇā	- coax
51. bīsēm	bīsmōṇā	- be coaxed
52. bīṭər	bīṭərnā	- fall out



53. bəṭha	bəṭhōṇā	to cause to withdraw
54. buhar	buharnā	- sweep
55. bula	bulōṇā	- call
56. būṇa	būṇōṇā	- cause to be woven
57. burā	burōṇā	- talk in sleep
58. burək	burkōṇā	- sprinkle
59. bu:th	bu:thōṇā	- fill upto the brim

Tone - 3:

1. béd:	bédōṇā	- cut
2. bəḍa (c)	bəḍōṇā	- cause to be cut
3. béd	bédōṇā	- increase
4. bəḍa (c)	bəḍōṇā	- cause to increase
5. bēj:	bēj:ōṇā	- be committed
6. bēn:	bēn:ōṇā	- tie
7. bēna	bēnōṇā	- cause to tie (c)
8. bía	bíōṇā	- marry
9. bəsá	bəsōṇā	- make to believe (c)
10. bín	bínōṇā	- pierce
11. bina (c)	binōṇā	- cause to be pierced (c)
12. bəgá (c)	bəgōṇā	- fling
13. bē	bēṇā	- sit
14. bék	békōṇā	- be intoxicated
15. bēka	békōṇā	- cause to be intoxicated
16. bél	bélōṇā	- be amused
17. bá	bōṇā	- plough
18. bór	bórṇā	- come to help

Main Verbs (contd.): P-initial lexical itemsT-initial piecep̄h̄v̄Tone - 1:

1. tək:	tək:ə̃n̄ã	to push
2. təkà	təkò̃n̄ã	- help push
3. tùkh	tùkhə̃n̄ã	- give out smoke
4. tukhà	tukhò̃n̄ã	- cause to burn
5. tò	tò̃n̄ã	- wash
6. tù:	tù:n̄ã	- drag
7. tuà	tuò̃n̄ã	- get washed
8. tià	tiò̃n̄ã	- meditate on
9. tùãkh	tùãkhə̃n̄ã	- smoke
10. tēmək	tēməkə̃n̄ã	- thump
11. tēmka	tēmkõn̄ã	- threaten
12. tər	tər̃n̄ã	- cook curry
13. tərà	tərò̃n̄ã	- cause to be cooked
14. tār	tār̃n̄ã	- resolve
15. tərək	tərəkə̃n̄ã	- throb
16. tərka	tərkõn̄ã	- terrify
17. tès	tèsə̃n̄ã	- sink
18. tèsà	tèsò̃n̄ã	- cause to sink

Tone - 2:

1. təp	təpə̃n̄ã	- suffer
2. təpa	təpò̃n̄ã	- heat

phv

3. tək:	tək:ẽṇã	to see
4. tēj	tējẽṇã	- leave
5. tɪag	tɪagẽṇã	- renunciate
6. turək	turkẽṇã	- season
7. tərəph	tərphẽṇã	- feel uneasy
8. tərəs	tərsẽṇã	- long for
9. tũn:	tũn:ẽṇã	- stuff
10. tãn	tãnẽṇã	- spread
11. tẽn	tẽnẽṇã	- stretch
12. tol	tolẽṇã	- weigh
13. tula	tulõṇã	- get weighed
14. təl	tələṇã	- fry
15. tər	tərñã	- swim
16. tar	tarnã	- float
17. tur	turnã	- walk
18. tor	tornã	- start
19. tır	tırñã	- crack with dryness
20. tar	tarnã	- admonish
21. tor	torñã	- pluck, to break

Tone - 3:

1. t'ílek	t'ílkẽṇã	- slip
2. t'ék	t'ékẽṇã	- be frightened
3. t'ágər	t'ágərñã	- boast
4. t'ébək	t'ébəkẽṇã	- be alarmed

Main Verbs: p-initial lexical itemT-initial pieceTone - 2:

1. thəp:	thəp:ə̃nã	to hammer
2. thap	thapə̃nã	- establish
3. thapəɾ	thapəɾnã	- pat a child
4. thək:	thək:ə̃nã	- be tired
5. thɪɾ	thɪɾnã	- be unsteady
6. thop	thopə̃nã	- put blame
7. thur	thurnã	- be in demand
8. thɪɾək	thɪɾəkə̃nã	- be discouraged
9. thərthəra	thərthərə̃nã	- tremble
10. thəthəla	thəthlə̃nã	- stammer

Tone - 3:

1. thúk:	thúk:ə̃nã	- spit
2. thém:	thém:ə̃nã	- hold up

Main Verbs: p-initial lexical itemT-initial piecepvTone - 2:

1. de	dēṇã	to give
2. dəb	dəbēṇã	- be pressed
3. dəb:	dəb:ēṇã	- press
4. dəba	dəbōṇã	- bury
5. dəbək	dəbkēṇã	- snub
6. dəbuka	dəbkōṇã	- chide
7. dəbiṛ	dəbiṛṇã	- push back
8. dutkar	dutkarṇã	- rebuke
9. dekh	dekhēṇã	- see
10. dəkhaḷ	dəkhaḷēṇã	- show
11. dukh	dukhēṇã	- ache
12. dukha	dukhōṇã	- cause pain
13. dəg	dəgēṇã	- be kindled
14. dəga	dəgōṇã	- kindle
15. dag	dagēṇã	- stamp
16. dəḷ	dəḷēṇã	- grind
17. dēmək	dēməkēṇã	- shine
18. dēmka	dēmkoṇã	- cause to shine
19. dərək	dərəkēṇã	- be cracked
20. dərərṛ	dərərṛṇã	- grind coarsely
21. dərṛ	dərṛṇã	- run
22. dərə	dərəṇã	- cause to run



23. dəs:	dəs:ẽṇã	to tell
24. dɪs	dɪsẽṇã	- appear
25. dua	duṭṇã	- cause to give
26. duhəra	duhrṭṇã	- repeat
27. dəbəl:	dəbəl:ẽṇã	- threaten

Tone - 3:

1. dél	délẽṇã	- be afraid
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Main Verbs (contd.): p-initial lexical itemT-initial piecep<sub>h</sub>v̄Tone - 1:

1. ṭɛ̀	ṭɛ̃nã	to fall down
2. ṭà	ṭɔ̃nã	- demolish
3. ṭò	ṭɔ̃nã	- carry
4. ṭək:	ṭək:ẽnã	- cover
5. ṭəkà	ṭəkɔ̃nã	- cause to be covered
6. ṭaḷ	ṭaḷẽnã	- melt
7. ṭəḷ	ṭəḷẽnã	- be cast
8. ṭiḷək	ṭilḳẽnã	- be loosed
9. ṭəḷkà	ṭəḷkɔ̃nã	- cause to be loosed

Tone - 2:

1. ṭəp:	ṭəp:ẽnã	- leap, to cross
2. ṭəpa	ṭəpɔ̃nã	- cause to leap
3. ṭəpək	ṭəpkẽnã	- drop
4. ṭəpka	ṭəpkɔ̃nã	- cause to drop
5. ṭik	ṭikẽnã	- stay
6. ṭika	ṭikɔ̃nã	- cause to stay
7. ṭək	ṭəkẽnã	- stack
8. ṭuk:	ṭuk:ẽnã	- chop
9. ṭok	ṭokẽnã	- interrupt
10. ṭək:ər	ṭək:ərnã	- meet
11. ṭəkra	ṭəkrɔ̃nã	- cause collision
12. ṭəkor	ṭəkornã	- tap

p<sub>h</sub>v̄

- |                                     |   |           |
|-------------------------------------|---|-----------|
| 13. t <sub>ə</sub> g̃               | t <sub>ə</sub> g̃əñã                      | to hang   |
| 14. t <sub>u</sub> t <sub>u</sub> : | t <sub>u</sub> t <sub>u</sub> :əñã        | - break   |
| 15. t <sub>a</sub> ḷ               | t <sub>a</sub> ḷəñã/t <sub>a</sub> ḷəñã | - put off |

Tone - 3:

- |                      |                      |                   |
|----------------------|----------------------|-------------------|
| 1. t <sub>é</sub> ḳ | t <sub>é</sub> ḳəñã | - be fresh        |
| 2. t <sub>é</sub> ḷ | t <sub>é</sub> ḷəñã | - walk at leisure |
| 3. t <sub>í</sub> ḅ | t <sub>í</sub> ḅəñã | - slip away       |
| 4. t <sub>ó</sub>    | t <sub>ó</sub> əñã   | - feel about      |
| 5. t <sub>ó</sub> ḷ | t <sub>ó</sub> ḷəñã | - search          |

Main Verbs: p-initial lexical itemT-initial pieceTone - 2:

1. ɬəp:	ɬəp:ə̃nã	to stamp
2. ɬak	ɬakə̃nã	- engage
3. ɬok	ɬokə̃nã	- beat
4. ɬəg	ɬəgə̃nã	- cheat
5. ɬənək	ɬənəkə̃nã	- jingle
6. ɬar	ɬarnã	- make cool
7. ɬukra	ɬukrə̃nã	- kick
8. ɬor	ɬornã	- test an egg
9. ɬũ:g	ɬũ:gə̃nã	- taste

Tone - 3:

1. ɬér	ɬérnã	- wait, to stay
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Tone - 3:

1. dɛ́	dɛ́ŋã	to be occupied
2. dǎ́	dǎ́ŋã	- spread a bed
3. dɛ́m:	dɛ́m:ŋã	- burn
4. dǎ́lɛk	dǎ́lkŋã	- glitter
5. dól	dólŋã	- pour, to spill
6. dǎ́lka	dǎ́lkŋã	- cause to glitter

Main Verbs (contd.): p-initial lexical itemsK-initial piecephvTone - 1:

1. kṵ	kṵṇā	to stir
2. kṵt	kṵtṵṇā	- be diminished
3. kṵtā	kṵtṵṇā	- subtract
4. kṵt	kṵtṵṇā	- grind
5. kṵsit	kṵsitṵṇā	- drag
6. kṵkh	kṵkhṵṇā	- search
7. kṵt:	kṵt:ṵṇā	- press
8. kṵtā	kṵtṵṇā	- cause to be pressed
9. kṵm:	kṵmṵṇā	- roam about
10. kṵmā	kṵmṵṇā	- roll
11. kṵl:	kṵl:ṵṇā	- send
12. kṵl	kṵlṵṇā/kṵlṵṇā	- dissolve
13. kṵl	kṵlṵṇā	- wrestle
14. kṵcōl	kṵcōlṵṇā	- make muddy
15. kṵgāl	kṵgālṵṇā	- rinse
16. kṵbər	kṵbərṇā	- be confused
17. kṵbrā	kṵbrṵṇā	- confuse
18. kṵr	kṵrṇā	- be surrounded
19. kṵr	kṵrṇā	- encircle
20. kṵ:r	kṵ:rṇā	- scold
21. kṵgù:r	kṵgù:rṇā	- show off
22. kṵr	kṵrṇā	- chisel

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23. kəṛà	kəṛòṇã	to get made
24. kərorṛ	kərorṇã	- scrape
25. kṛsəṛ	kṛsəṇã	- slide
26. kusəṛ	kusəṇã	- force in
27. kṛs	kṛsəṇã	- enter
28. kəs	kəsəṇã	- be rubbed
29. kəsà	kəsòṇã	- rub

Tone - 2:

1. kəbu:l	kəbu:ləṇã	- accept
2. kəc:h	kəc:həṇã	- wander
3. kutər	kutəṇã	- nibble
4. kutra	kutrəṇã	- cause to chop
5. kət:	kət:əṇã	- spin
6. kəta	kətəṇã	- cause to be spun
7. kətra	kətrəṇã	- avoid
8. kət:	kət:əṇã	- cut
9. kəṭa	kəṭəṇã	- cause to be cut
10. kucəḷ	kucəḷəṇã	- crush
11. kud:	kud:əṇã	- leap
12. kəmb	kəmbəṇã	- shiver
13. kəma	kəməṇã	- earn
14. kuṭ:	kuṭ:əṇã	- beat
15. kuṭa	kuṭəṇã	- cause to be beaten
16. kər	kəṛṇã	- do
17. kəra	kəṛəṇã	- cause to do

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18. ker	kernã	to scatter
19. kír	kírnã	- be poured
20. kil	kilõnã	- charm
21. kəḷəp	kəḷpẽnã	- be tormented
22. kəḷpa	kəḷpõnã	- torment
23. kər	kərnã	- fetter
24. kərək	kərəkẽnã	- thunder
25. kẽmla	kẽmlõnã/kũmlõnã	- fade
26. kəs:	kəs:ẽnã	- tighten
27. kəsia	kəsĩõnã	- go bad
28. kos	kosẽnã	- curse
29. kusək	kuskẽnã	- speak
30. kírər	kírərñã	- gnash

Tone - 3:

1. ké'	kénã	- say
2. kíł:	kíł:ẽnã	- strain at stool
3. kéd'	kédẽnã	- take out
4. kəḍa (c)	kəḍõnã	- cause to be taken out
5. kár'	kárñã	- boil
6. kər'	kərñã	- be boiled
7. kərá'	kəróñã	- groan

Main Verbs: p-initial lexical itemK-initial pieceTone - 2:

1. khəp	khəpəñã	to be expended
2. khəder	khəderñã	- expel
3. khət:	khət:əñã	- earn
4. khətək	khətəkəñã	- be an eyesore
5. khɪl:ər	khɪl:ərñã	- be scattered
6. khɪlar	khɪlarnã	- scatter
7. khərək	khərəkəñã	- rattle
8. khərka	khərəkəñã	- thump
9. khərəc	khərəcəñã	- spend
10. khərid	khəridəñã	- buy
11. khər	khərñã	- fall off
12. khar	kharnã	- cause to dissolve
13. khəroc	khərocəñã	- scrape
14. khɪɾ	khɪɾñã	- bloom
15. khɪsək	khɪskəñã	- slip away
16. khod	khodəñã	- dig
17. khoj	khojəñã	- search
18. khor	khornã	- dissolve
19. khul:	khul:əñã	- flay
20. khurəc	khurəcəñã	- scrape a pot



Tone - 3:

1. khé'	khénã	to oppose
2. khá'	khãnã	- eat
3. khébər	khébərñã	- struggle
4. khẽg'	khẽgẽñã	- cough
5. khərú:	khərú:ñã	- itch
6. khíc:	khíc:ẽñã	- pull
7. khíj	khíjẽñã	- be annoyed
8. khél'	khélẽñã	- play
9. kho'	khonã	- snatch
10. khól'	khólẽñã	- open
11. khób'	khóbẽñã	- pierce
12. khúb:	khúb:ẽñã	- penetrate
13. khúl:	khúl:ẽñã	- be opened
14. khũj'	khũjẽñã	- miss

Main Verbs: p-initial lexical itemK-initial piecepv-Tone - 2:

1. ga	gõṇã	to sing
2. gua	guõṇã	- lose
3. gəḍ:	gəḍ:õṇã	- fix
4. gəṭ:h	gəṭ:hõṇã	- tie
5. guṭək	guṭkõṇã	- coo
6. guḍ:	guḍ:õṇã	- weed and hoe
7. guḍa	guḍõṇã	- cause to be hoed
8. goḍ	goḍõṇã	- hoe
9. guac	guacõṇã	- be lost
10. gũnd	gũndõṇã	- plait (hair)
11. gũnda	gũndõṇã	- cause to be plaited
12. gəj:/gərəj	gəj:õṇã/gərəjõṇã	- roar
13. gəja	gəjõṇã	- cause to roar
14. gũ:j	gũ:jõṇã	- echo
15. gujər	gujərṇã	- die
16. gujar	gujarnã	- pass time
17. gal	galõṇã	- melt
18. gəla	gəlõṇã	- cause to be melted
19. gərək	gərəkõṇã	- drown
20. gir	girnã	- fall
21. gəra	gərõṇã	- cause to fall
22. geṛ	geṛnã	- cause to revolve



Main Verbs (contd.): p-initial lexical itemC-initial piecephvTone - 1:

1. cēb	cēbēñã	to beat
2. cāk	cākēñã	- glance
3. còk	còkēñã	- throw fuel into furnace
4. cùk	cùkēñã	- bow
5. cuka	cukōñã	- cause to bend
6. cəl:	cəl:ēñã	- suffer
7. cù:l	cù:lēñã	- rock
8. culà	culōñã	- swing
9. culəs	culsēñã	- be charred
10. culsà	culsōñã	- cause to be charred
11. cù:m	cù:mēñã	- enjoy, to swing
12. cù:r	cù:rñã	- regret
13. cər	cərñã	- fall off
14. càr	càrñã	- brush
15. cəs:	cəs:ēñã	- rub
16. cəpək	cəpkēñã	- wink
17. cəgər	cəgərñã	- quarrel
18. cìjək	cìjkēñã	- hesitate
19. cələk	cəlkeñã	- shine
20. cəpət	cəptēñã	- pounce upon
21. cējor	cējorñã	- shake
22. cətək	cətkeñã	- jerk
23. cìrək	cìrkeñã	- scold
24. cùjla	cùjlōñã	- be angry

phvTone - 2:

1. cəb:	cəb:ə̃nã	to chew
2. cək:	cək:ə̃nã	- lift
3. cəl:	cəl:ə̃nã	- walk, to move
4. cəla	cəlɔ̃nã	- start
5. cə̃mək	cə̃mkə̃nã	- shine
6. cə̃mka	cə̃mkɔ̃nã	- cause to shine
7. cə̃meɾ	cə̃meɾnã	- cause to stick
8. cĩmbəɾ	cĩmbəɾnã	- stick
9. cə̃nd	cə̃ndə̃nã	- sharpen
10. car	carnã	- graze
11. cəsək	cəsəkə̃nã	- ache
12. cətar	cətarñã	- remind
13. cət:	cət:ə̃nã	- lick
14. cɔ̃k	cɔ̃kə̃nã	- be alarmed
15. cep	cepə̃nã	- paste
16. cet	cetə̃nã	- be aware of
17. cik	cikə̃nã	- cry out
18. cɪlək	cɪlkə̃nã	- shine
19. cɪlka	cɪlkɔ̃nã	- cause to shine
20. cĩɲək	cĩɲkə̃nã	- speak loud
21. cĩɲ	cĩɲə̃nã	- pile up
22. cɪpək	cɪpkə̃nã	- stick
23. cɪp:	cɪp:ə̃nã	- clean cords of hemp
24. cir	cirnã	- saw
25. cɪɾ	cɪɾnã	- be teased



phv

26. cira	cirõṇã	to tease
27. cit:er	cit:ernã	- paint
28. cod	codẽṇã	- copulate
29. co	cõṇã	- drip, to milk
30. cit:h	cit:hẽṇã	- chew
31. copər	copərṇã	- smear with oil
32. cug	cugẽṇã	- be fed, to graze
33. cuga	cugõṇã	- feed
34. cūm:	cūm:ẽṇã	- kiss
35. cūṇḍ	cūṇḍẽṇã	- hit the mark
36. cūṇ	cūṇẽṇã	- select
37. cu:p	cu:pẽṇã	- suck sugarcane
38. cura	curõṇã	- steal
39. cu:r	cu:rṇã	- make powder
40. cu:s	cu:sẽṇã	- suck

Tone - 3:

1. cúb:	cúb:ẽṇã	- be pricked
2. cób	cóbẽṇã	- pierce
3. cuba (c)	cubõṇã	- prick
4. cūḡ	cūḡẽṇã	- suck milk
5. cuga (c)	cugõṇã	- suckle
6. cék	cékẽṇã	- be overjoyed
7. cər	cərṇã	- climb
8. cár	cárṇã	- raise

Main Verbs: p-initial lexical itemC-initial pieceTone - 2:

1. cha	chõṇã	to cover
2. chəp	chəpõṇã	- be printed
3. chap	chapõṇã	- print
4. chəpa	chəpõṇã	- cause to be printed
5. chət:	chət:õṇã	- roof
6. chəṭ:	chəṭ:õṇã	- winnow grain
7. chəḍ:	chəḍ:õṇã	- leave
8. chək	chəkẽṇã	- eat
9. chəka	chəkõṇã	- cause to eat
10. chələk	chələkẽṇã	- splash
11. chəlka	chələkõṇã	- cause to be splashed
12. chəḷ	chələṇã	- cheat
13. chaṇ	chaṇẽṇã	- sift
14. chəṇək	chəṇəkẽṇã	- ring
15. chəṇka	chəṇkõṇã	- rattle
16. ched	chedẽṇã	- bore
17. chetəṛ	chetəṛnã	- beat
18. cheṛ	cheṛnã	- tease
19. chiṛ	chiṛnã	- begin
20. chiṛək	chiṛkẽṇã	- sprinkle
21. chik:	chik:õṇã	- sneeze
22. chua	chuõṇã	- cause to be touched
23. chupa	chupõṇã	- hide

- |           |          |                |
|-----------|----------|----------------|
| 24. chuṭ: | chuṭ:ṭṇṇ | to be freed    |
| 25. chuṛa | chuṛṭṇṇ  | - get released |

Tone - 3:

- |         |        |         |
|---------|--------|---------|
| 1. chú: | chú:ṇṇ | - touch |
|---------|--------|---------|



25. joṛ	joṛnã	to add
26. ju:ṛ	ju:ṛnã	- bind
27. juṛ	juṛnã	- be joined

Tone - 3:

1. jé	jéñã	- copulate with
2. jú:j	jú:jñã	- fight
3. jəha (c)	jəhñã	- cause to copulate with



Main Verbs: p̄-initial lexical itemM-initial piece

p̄

Tone - 1:

1. mədòl	mədòlǽnã	to tumble
2. murjà	murjòñã	- fade, to wither

Tone - 2:

1. map	mapǽñã	- measure
2. mu:t	mu:tǽñã	- pass water
3. mäsət	mästǽñã	- be excited
4. mæsta	mästǽñã	- excite
5. mæta	mætǽñã	- arrange
6. mith	mithǽñã	- decide
7. mūd	mūdǽñã	- close
8. meṭ	meṭǽñã	- blot out
9. miṭ	miṭǽñã	- close the eyes
10. miṭ	miṭǽñã	- be blotted out
11. muk:	muk:ǽñã	- come to an end
12. muk:ər	muk:ərñã	- deny
13. muka	mukǽñã	- bring to an end
14. mušək	muškǽñã	- have a bad smell
15. mərək	mərəkǽñã	- creak
16. mǽg	mǽgǽñã	- beg
17. mec	mecǽñã	- compare
18. mic	micǽñã	- close the eyes
19. muc:h	muc:hǽñã	- cut down
20. mutar	mutarñã	- become sore

21. māj	mājõñã	to rub (utensils)
22. mēm̃ia	mēm̃iõñã	- whine
23. mẽn:(ə)	mẽn:õñã	- agree to
24. mēna	mẽnõñã	- appease
25. mũn:(ə)	mũn:õñã	- shave
26. mĩñ	mĩñõñã	- measure
27. măn	mănõñã	- enjoy
28. mẽñəs	mẽñsõñã	- consecrate
29. məl:	məl:õñã	- seize
30. məl̃	məl̃õñã	- smear
31. mel̃	mel̃õñã/mel̃õñã	- unite
32. mīl̃	mīl̃õñã	- meet
33. mər	mərñã	- die
34. mar	marnã	- beat, to kill
35. mərər̃	mərər̃ñã	- twist
36. mər̃	mər̃ñã	- bend

Tone - 3:

1. míd:	míd:õñã	- trample
2. mék	mékõñã	- give a pleasant smell
3. mэг	mэгõñã	- burn
4. məga (c)	mэгõñã	- cause to burn
5. mél̃	mél̃õñã	- enjoy
6. mэр̃	mэр̃ñã	- frame
7. mərə (c)	mэр̃õñã	- cause to be framed

Main Verbs: p̄-initial lexical item

N-initial piece

Tone - 1:

1. nà	nòṇã	to bathe
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Tone -2:

1. nap	napẽṇã	- measure
2. nəpɪɾ	nəpɪɾṇã	- grind
3. nɪb:əɾ	nɪb:əɾṇã	- be decided
4. nəberɾ	nəberṇã	- finish
5. nɪtar	nɪtarṇã	- classify
6. nət:h	nət:hẽṇã	- bring under control
7. nəṭ:h	nəṭ:hẽṇã	- flee
8. nəṭha	nəṭhẽṇã	- cause to flee
9. nɪk:əl	nɪk:əlẽṇã	- come out
10. nəkhar	nəkharṇã	- bleach
11. nəkherɾ	nəkherṇã	- distinguish
12. nɪgəl	nɪgəlẽṇã	- swallow
13. nəc:	nəc:ẽṇã	- dance
14. nəca	nəcẽṇã	- cause to dance
15. nəcorɾ	nəcorṇã	- squeeze
16. nɪc:əɾ	nɪc:əɾṇã	- be squeezed
17. nəjɪṭ:h	nəjɪṭ:hẽṇã	- perform
18. nɪrəkh	nɪrəkhẽṇã	- value
19. nəgẽnd	nəgẽndẽṇã	- quilt
20. nərərɾ	nərərṇã	- tie (cattle) together
21. nĩnd	nĩndẽṇã	- villify

22. nis:ər	nis:ərnã	to blossom
23. nistar	nistarnã	- save
24. nihar	niharnã	- look for

Tone - 3:

1. níb	níbẽṇã	- be executed
2. nígər	nígərnã	- be immersed
3. nẽḡ	nẽḡẽṇã	- cross

Main Verbs: p̄-initial lexical item

L-initial piece

Tone - 2:

1. lɛ	lẽṇṇṇṇ	to take
2. la	lõṇṇṇṇ	- stick, to apply
3. lia	liõṇṇṇṇ	- bring
4. lip:	lip:ẽṇṇṇṇ	- plaster
5. ləpet	ləpetẽṇṇṇṇ	- wrap
6. ləph	ləphẽṇṇṇṇ	- bow down
7. lib:əṇ	lib:ẽṇṇṇṇ	- be smeared
8. ləber	ləberṇṇṇṇ	- smear
9. lətar	lətarṇṇṇṇ	- tread down
10. ləd:	ləd:ẽṇṇṇṇ	- load
11. ləda	lədõṇṇṇṇ	- help loading
12. ləṭək	ləṭkẽṇṇṇṇ	- hang
13. leṭ	leṭẽṇṇṇṇ	- lie down
14. luṭ:	luṭ:ẽṇṇṇṇ	- rob
15. luk	lukẽṇṇṇṇ	- hide
16. likh	likhẽṇṇṇṇ	- write
17. ləg:	ləg:ẽṇṇṇṇ	- join
18. ləḡra	ləḡrõṇṇṇṇ	- limp
19. loc	locẽṇṇṇṇ	- desire
20. ləcək	ləcəkẽṇṇṇṇ	- spring
21. ləmək	ləmkẽṇṇṇṇ	- hang
22. lələc	lələcẽṇṇṇṇ	- be greedy
23. ləlca	ləlccõṇṇṇṇ	- covet



24. ləlkar	ləlkarṇā	to challenge
25. ləṛ	ləṛṇā	- fight
26. līṣək	līṣkēṇā	- flash
27. ləha	ləhōṇā	- help unload

Tone - 3:

1. lá	lóṇā	- bring down
2. lé	lēṇā	- come down
3. lób:	lób:ēṇā	- find
4. lú:	lú:ṇā	- set on fire
5. lój:	lój:ēṇā	- be obtained
6. léra	léṛōṇā	- flutter gently

Main Verbs: p̄-initial lexical itemR-initial pieceTone - 2:

1. ro	rōṇā	to weep
2. ret	ṛetāṇā	- file
3. rəṭ	rəṭāṇā	- repeat
4. rēnd	rēndāṇā	- plane
5. ṛuk	rukāṇā	- wait
6. rok	rokāṇā	- stop
7. rēka	rəkōṇā	- cause to be stopped
8. rək:h	rək:hāṇā	- keep
9. rəkha	rəkhōṇā	- cause to be kept
10. rēg	rēgāṇā	- dye
11. rēc	rēcāṇā	- be absorbed
12. rēca	rēcōṇā	- adorn
13. rəgəṛ	rəgəṛnā	- rub
14. rēj:	rēj:āṇā	- be satisfied
15. rēja	rējōṇā	- satisfy
16. ruḷ	ruḷāṇā	- be neglected
17. roḷ	roḷāṇā	- subdue
18. rəḷ	rəḷāṇā	- join
19. rəḷa	rəḷōṇā	- mix
20. rəṛək	rəṛəkāṇā	- give pain
21. rīṛək	rīṛəkāṇā	- churn
22. rəs	rəsāṇā	- be juicy
23. rus:	rus:āṇā	- be displeased

Tone - 3:

1. ré	réñã	to stay
2. rá	rónã	- pick a mill-stone
3. ríj	ríjẽñã	- be pleased
4. rín:	rín:ẽñã	- cook
5. ríj:	ríj:ẽñã	- be cooked
6. rúj:	rúj:ẽñã	- be absorbed
7. rar	rarñã	- bake
8. rer	rerñã	- cause to move
9. rór	rórñã	- pour

Main Verbs: p̄-initial lexical itemS-initial pieceTone - 2:

1. sī	sīṇṇṇ	to sew
2. sī	sīṇṇṇ	- sleep
3. su:t	su:tṇṇṇ	- draw
4. səd:	səd:ṇṇṇ	- call
5. sɪṭa	sɪṭṇṇṇ	- cause to cast
6. sək	səkṇṇṇ	- be able to
7. suk:	suk:ṇṇṇ	- be dry
8. suka	sukṇṇṇ	- dry
9. sek	sekṇṇṇ	- warm
10. sɪk:h	sɪk:hṇṇṇ	- learn
11. sikh	sikhṇṇṇ	- excite
12. sɪkha	sɪkhṇṇṇ	- teach
13. səkhal	səkhalṇṇṇ	- teach
14. suk:h	suk:hṇṇṇ	- take a vow
15. sēg	sēgṇṇṇ	- feel shy
16. sūgəɾ	sūgəɾṇṇṇ	- shrink
17. soc	socṇṇṇ	- think
18. səj	səjṇṇṇ	- adorn oneself
19. səja	səjṇṇṇ	- decorate
20. sīj	sījṇṇṇ	- irrigate
21. suj:	suj:ṇṇṇ	- swell
22. suja	sujṇṇṇ	- cause to swell
23. səməɾ	səməɾṇṇṇ	- finish
24. sɪməɾ	sɪməɾṇṇṇ	- be condensed

25. sımər	sımərnã	to repeat
26. sõmp	sõmpẽṇã	- hand over
27. sũṇ	sũṇẽṇã	- listen
28. sũṇa	sũṇõṇã	- inform
29. siãṇ	siãṇẽṇã	- recognize
30. siṇək	siṇkẽṇã	- blow the nose
31. suləg	sulḡẽṇã	- be kindled
32. sərək	sərkẽṇã	- get out of the way
33. sar	sarnã	- help
34. suar	suarnã	- make tidy
35. sər	səṛnã	- decay
36. saṛ	sarṇã	- burn
37. sisək	siskẽṇã	- sob
38. səsta	səstõṇã	- take rest
39. səhar	səharnã	- bear
40. səheṛ	səheṛnã	- procure
41. səma	səmõṇã	- die, to pass away

Tone - 3:

1. sé	séṇa	- endure
2. sék	sékəṇa	- gasp
3. sém	séməṇa	- be afraid
4. sãmb	sãmbəṇa	- sustain
5. sãmbəl	sãmbələṇa	- stand firm
6. sád	sádəṇa	- practise
7. sód	sódəṇa	- correct
8. síṭ:	síṭ:əṇa	- throw away
9. síj:	síj:əṇa	- take revenge



10. séməj	sémjẽṇã	to understand
11. səlá	səlónã	- praise
12. súləj	súljẽṇã	- be disentangled
13. súg	súgẽṇã	- smell
14. súṛək	súrkẽṇã	- swallow by gulps

Š-initial piece

1. šu:k	šu:kẽṇã	- hiss
2. šõgar	šõgarnã	- decorate
3. šərma	šermõṇã	- blush

Main Verbs: p-initial lexical itemH-initial pieceTone - 2:

1. ho	hōṇã	to be
2. həph	həphẽṇã	- pant
3. hub:	hub:ẽṇã	- boast
4. habəṛ	habəṛnã	- be very hungry
5. həṭ	həṭẽṇã	- move away
6. həṭa	həṭõṇã	- cause to move
7. həṭək	həṭkẽṇã	- obstruct
8. hək:	hək:ẽṇã	- drive
9. həkar	həkarnã	- be proud
10. həkḷa	həkḷõṇã	- stammer
11. huãk	huãkẽṇã	- bark and howl
12. hũ:g	hũ:gẽṇã	- groan
13. hɪcək	hɪckẽṇã	- hesitate
14. həg:	həg:ẽṇã	- pass out bowls
15. hɪl:	hɪl:ẽṇã	- move
16. həla	həlõṇã	- shake
17. həlu:n	həlũ:nẽṇã	- shake vigorously
18. hələk	həl̥kẽṇã	- be rabid
19. har	harnã	- lose
20. həra	hərõṇã	- defeat
21. haṛ	haṛnã	- guess
22. həṛbəṛa	həṛbəṛõṇã	- be in a fright
23. hɪṇək	hɪṇkẽṇã	- neigh

24. həs:	həs:ə̃ṇã	to laugh
25. həsa	həsə̃ṇã	- cause to laugh

Tone - 3:

1. hămb	hămbə̃ṇã	- be tired
2. hămək	hămkə̃ṇã	- stink
3. hăṇḍ	hăṇḍə̃ṇã	- be used
4. hũ:j	hũ:jə̃ṇã	- sweep
5. hərə	hərəṇã	- be washed away

List of Main Verbs: Vowel-Initial piece

<u>Verb Stem</u>	<u>na/na form</u>	<u>English Translation</u>
1. ēṭh	ēṭhōṇā	to put on an air of consequence
2. a	ōṇā	- come
3. aphər	aphərnā	- boast
4. aṭhər	aṭhərnā	- become partially dry
5. akəṛ	akəṛnā	- defy
6. akh	akhōṇā	- tell
7. ɔṛ	ɔṛnā	- think of
8. odər	odərnā	- be discouraged
9. ū:g	ū:gōṇā	- doze off
10. əphra	əphrōṇā	- satiate
11. əṭək	əṭkōṇā	- be stopped
12. əṭka	əṭkōṇā	- stop
13. əṭer	əṭernā	- reel
14. əḍ:	əḍ:ōṇā	- open
15. ək:	ək:ōṇā	- be displeased
16. əka	əkōṇā	- displease
17. əkṛa	əkṛōṇā	- make stiff
18. əgrá	əgróṇā	- recover a debt
19. əjma	əjmōṇā	- test
20. əlap	əlapōṇā	- tune
21. ərēmb	ərēmbōṇā	- begin
22. əṛ	əṛnā	- resist
23. əṛa	əṛōṇā	- push into difficulty
24. əṛúg	əṛúgōṇā	- fasten

25. up:əɾ	up:əɾnã	to reach
26. úb:ər	úb:əɾnã	- jump
27. ubar (c)	ubarnã	- cause to jump
28. ub:əɭ	ub:əɭñã	- be boiled
29. ubal	ubalñã	- boil
30. úd:əɾ	úd:əɾnã	- be ripped
31. udeɾ (c)	udeɾnã	- rip off
32. uɖa	uɖõɳã	- cause to fly
33. uɖ/ur	uɖõɳã/urñã	- fly
34. uɖik	uɖikõɳã	- wait for
35. ut:ər	ut:əɾnã	- descend
36. utar	utarnã	- take down
37. uɾ:h	uɾ:hẽɳã	- rise
38. uk:ər	uk:əɾnã	- engrave
39. ukta	uktõɳã	- disturb
40. ukxa	uksõɳã	- excite
41. ukhar	ukharñã	- uproot
42. ug:	ug:ẽɳã	- grow
43. uga	ugõɳã	- cultivate
44. úg:əɾ	úg:əɾnã	- be revealed
45. ugar (c)	ugarñã	- disclose
46. ũgər	ũgəɾnã	- spring up
47. ucər	ucəɾnã	- speak
48. uc:həɭ	uc:həɭñã	- vomit
49. uj:əɾ	uj:əɾnã	- be ruined
50. ul:ər	ul:əɾnã	- tilt
51. ular	ularnã	- cause to tilt



52. ul̥t̥	ul̥t̥õnã	to be upset
53. ul̥ta	ul̥t̥õnã	- upset
54. ul̥əd:	ul̥əd:õnã	- overturn
55. úlj	úljõnã	- be tangled
56. ul̥ja (c)	ul̥jõnã	- entangle
57. usar	usarnã	- build up
58. us:ər	us:ərnã	- be built

Appendix IIList of Operator VerbsTone - 2:

1. a	õṇã	to come
2. uṭ:h	uṭ:hẽṇã	- get up
3. pɛ	pẽṇa	- lie
4. phɪr	phɪrnã	- roam
5. phəṛ	phəṛnã	- hold
6. tur	turnã	- walk
7. de	dẽṇã	- give
8. dekh	dekhẽṇã	- see
9. diṣ	diṣẽṇã	- be seen
10. kər	kərnã	- do
11. cəl:	cəl:ẽṇã	- move
12. cuk:	cuk:ẽṇã	- finish
13. chəḍ:	chəḍ:ẽṇã	- leave
14. ja	jãṇã	- go
15. mar	marnã	- beat
16. mɪl	mɪlẽṇã	- meet
17. nɪk:əl	nɪk:əlẽṇã	- come out
18. lɛ	lẽṇã	- take
19. rək:h	rək:hẽṇã	- keep
20. sək	səkẽṇã	- be able to
21. ho	hõṇã	- be
22. həṭ	həṭẽṇã	- stop

Tone - 3:

1. p <sup>́</sup> ōc	p <sup>́</sup> ōcōñã	to reach
2. b <sup>́</sup> é	b <sup>́</sup> éñã	- sit
3. b <sup>́</sup> ór	b <sup>́</sup> órñã	- come to the rescue
4. cá <sup>́</sup>	cóñã	- like
5. ré <sup>́</sup>	r <sup>́</sup> éñã	- live
6. sít:	sít:ōñã	- throw

- 
1. The total number is 28 for Doabi as against 34 reported by Puar (1974, 135) for the literary style of Punjabi.

APPENDIX III  
Auxiliary Verbs

TENSE	PRESENT				PAST			
GENDER	MASCULINE		FEMININE		MASCULINE		FEMININE	
NUMBER	Singular	Plural	Singular	Plural	Singular	Plural	Singular	Plural
1st	ã	ã	ã	ã	si	si	si	si
PERS. 2nd	ã	ã	ã	ã	si	si	si	si
3rd	a	a	a	a	si	si	si	si

APPENDIX IV  
INSTRUMENTAL EVIDENCE

A. SPECTROGRAMS

1.	kə̌	'chisel'	Tone-1	constricted
2.	kə̌	'fetter'	Tone-2	non-constricted
3.	kə̌	Tone-1	constricted	whispery
4.	kə̌	Tone-2	non-constricted	whispery
5.	kə̌aya	Tone-1	'subtracted'	constricted
6.	kə̌aya	Tone-2	'got cut'	non-constricted

B. TONOGRAMS

F-type Clauses:

7.	pà tərda ría.	1-2-3
8.	tar kùmda ría.	2-1-3
9.	pà šér gia.	1-3-2
10.	ó kər gia.	3-1-2
11.	taro šérõ pə̌j:i.	2-3-1
12.	óne lǎhi pən:i.	3-2-1

H.R.-type Clauses:

13.	pà tərda ría?	1-2-3
14.	tar kùmda ría?	2-1-3
15.	pà šér gia?	1-3-2
16.	ó kər gia?	3-1-2
17.	taro šérõ pə̌j:i?	2-3-1
18.	óne lǎhi pən:i?	3-2-1



H.Le.-type Clauses:

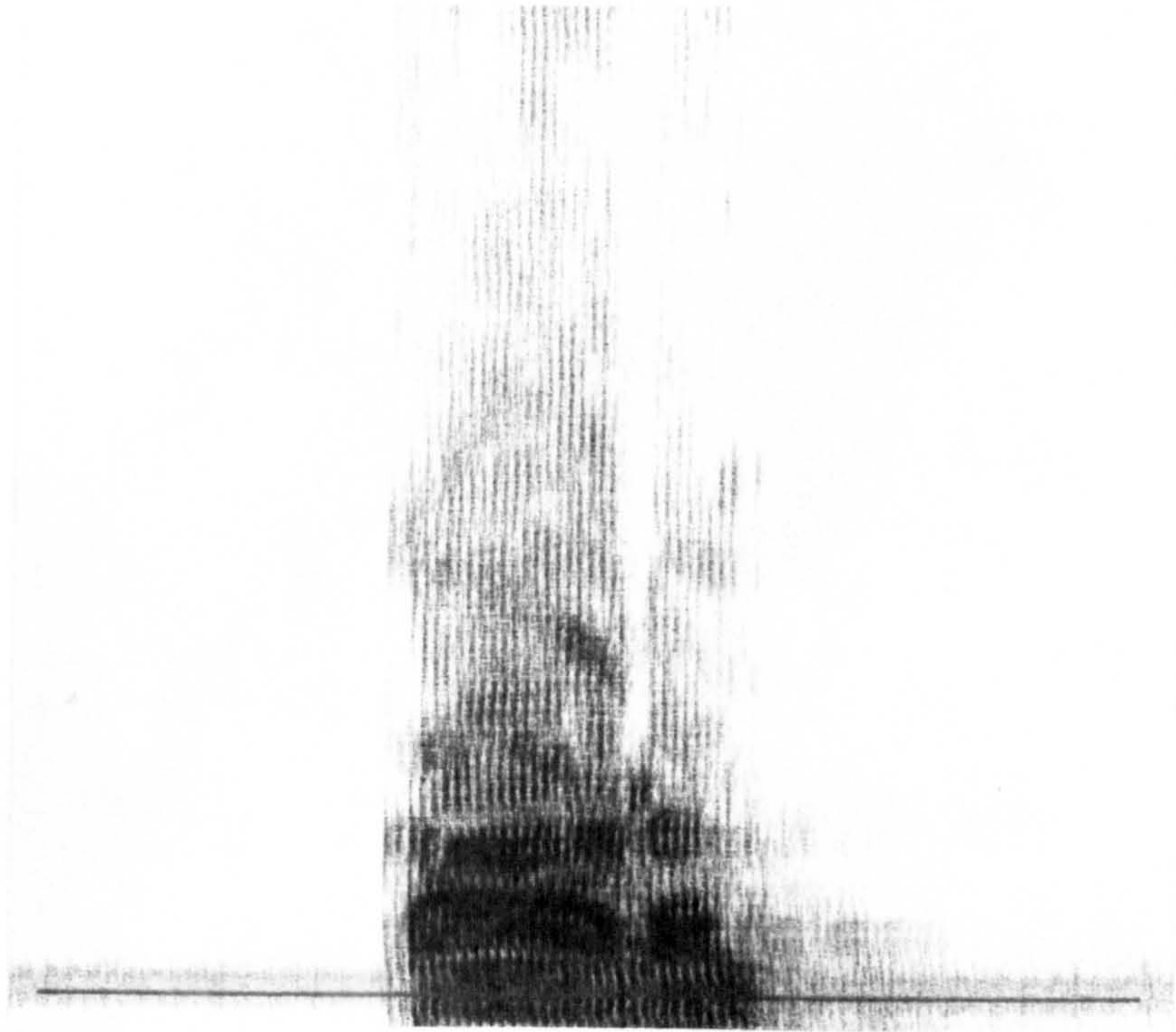
- |     |                  |       |
|-----|------------------|-------|
| 19. | pà tərda ría!    | 1-2-3 |
| 20. | tar kùmda ría!   | 2-1-3 |
| 21. | pà šér gia!      | 1-3-2 |
| 22. | ó kər gia!       | 3-1-2 |
| 23. | taro šérõ pəj:i! | 2-3-1 |
| 24. | óne laṭhi pən:i! | 3-2-1 |

M.Le.-type Clauses:

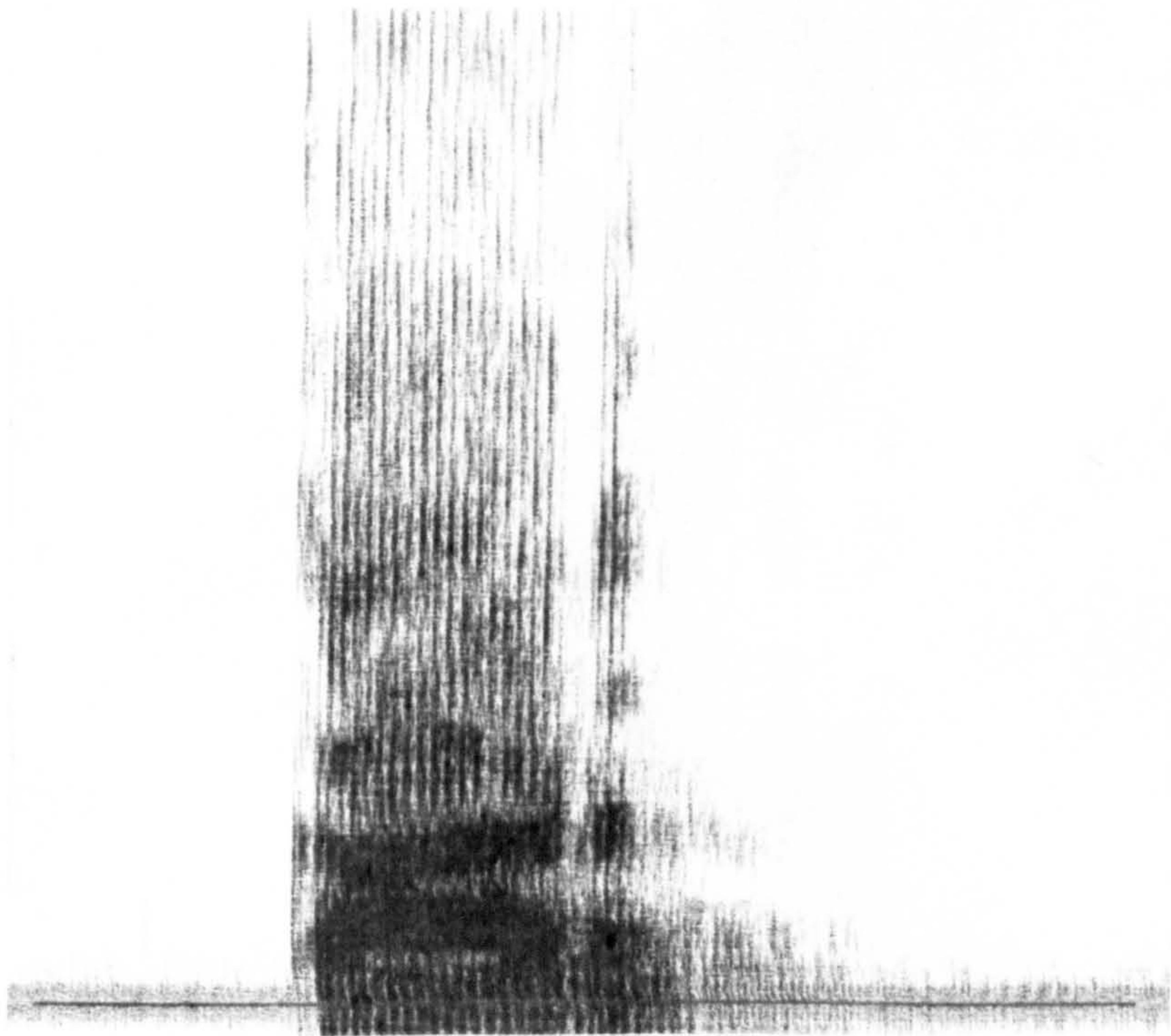
- |     |                           |                |
|-----|---------------------------|----------------|
| 25. | ó kər gia, pər...         | 3-1-2., 2...   |
| 26. | pòla kél aya si, pər...   | 1-3-2-2, 2.... |
| 27. | mě ónũ kía, pər...        | 2-3-3', 2....  |
| 28. | ónũ pəsa tã léb:a, pər... | 3-2-2-3, 2...  |
| 29. | tòbine kəpɾe tòte, pər... | 1-2-1, 2...    |
| 30. | mãne cəɭ tère, pər...     | 2-2-1, 2....   |

L.R.-type Clauses:

- |     |                  |             |
|-----|------------------|-------------|
| 31. | tusĩ hun jao;    | 2-2-2; .... |
| 32. | óne kəm: kəraya; | 3-2-2; .... |
| 33. | pərda;           | 3; ...      |
| 34. | pərđi;           | 3; ....     |
| 35. | cərda;           | 1; ....     |
| 36. | cərđi;           | 1; ....     |

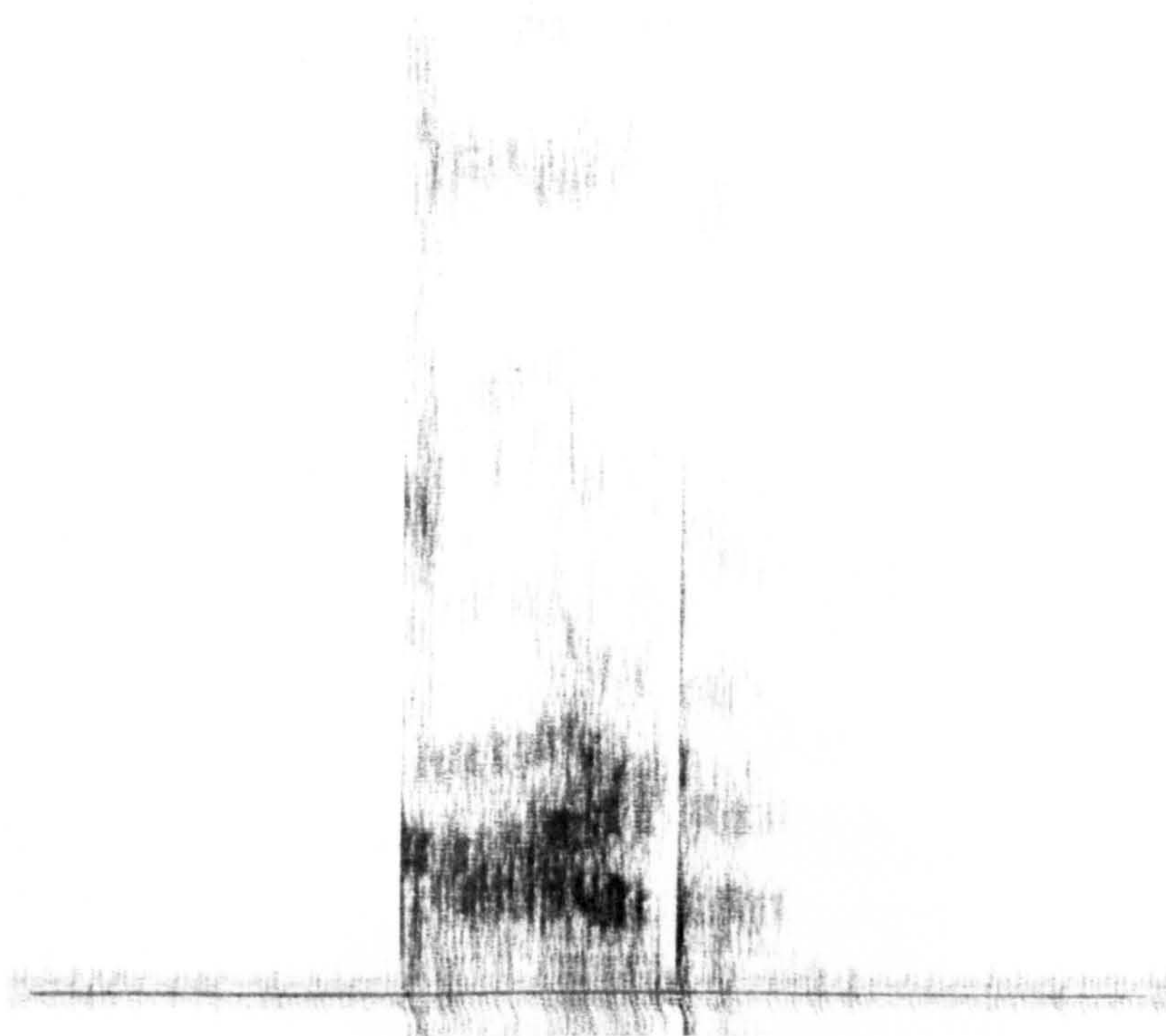


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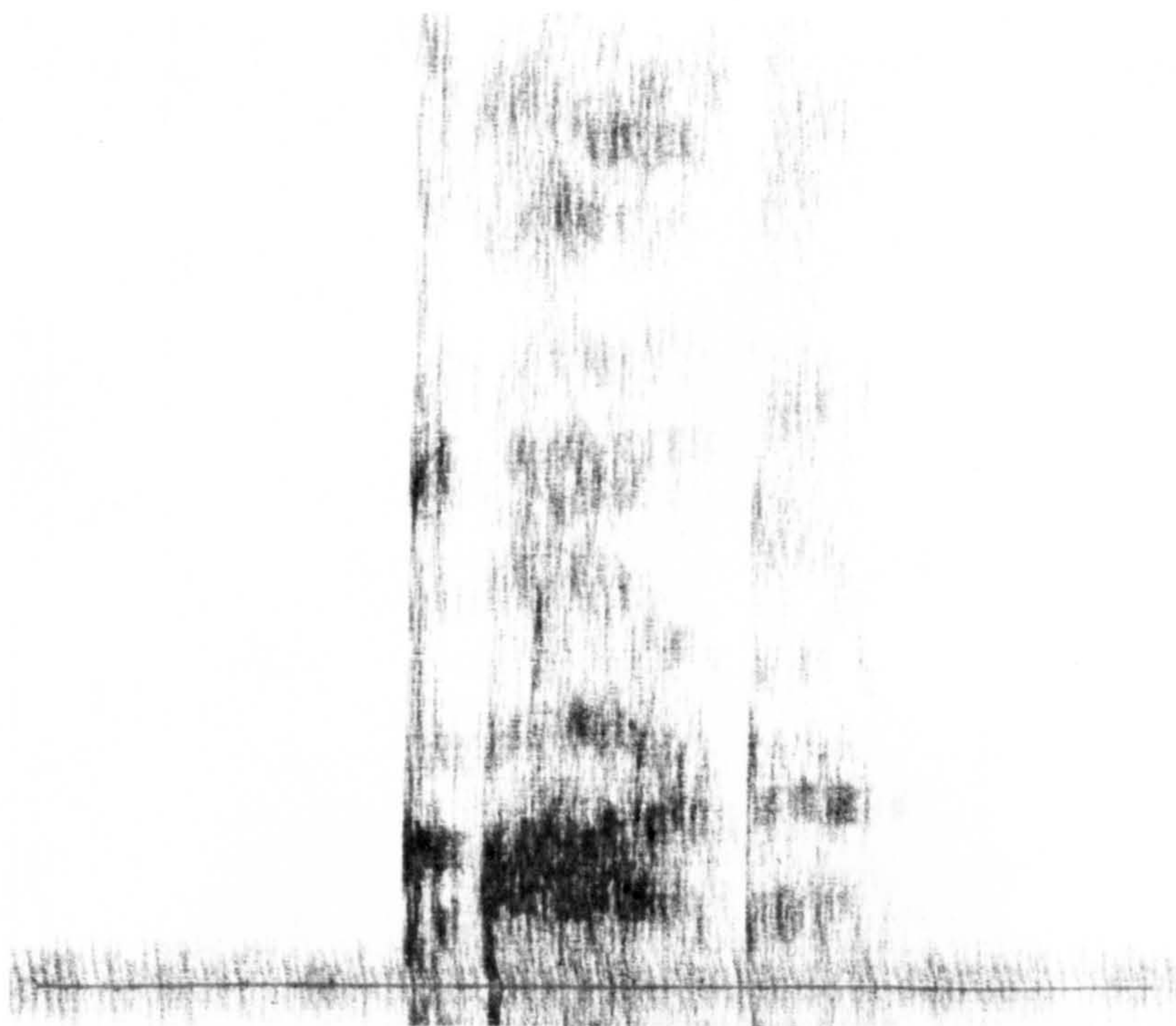


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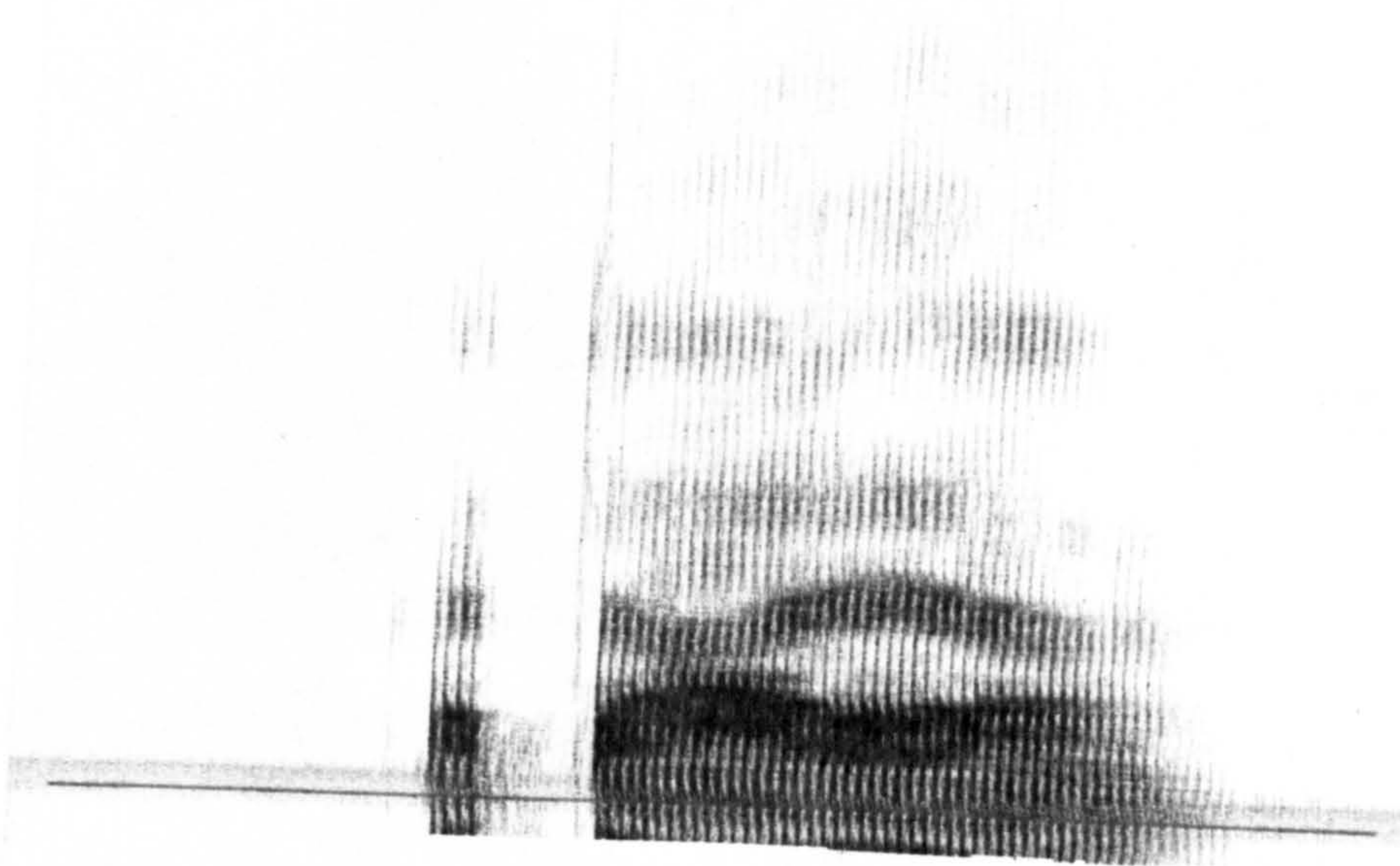




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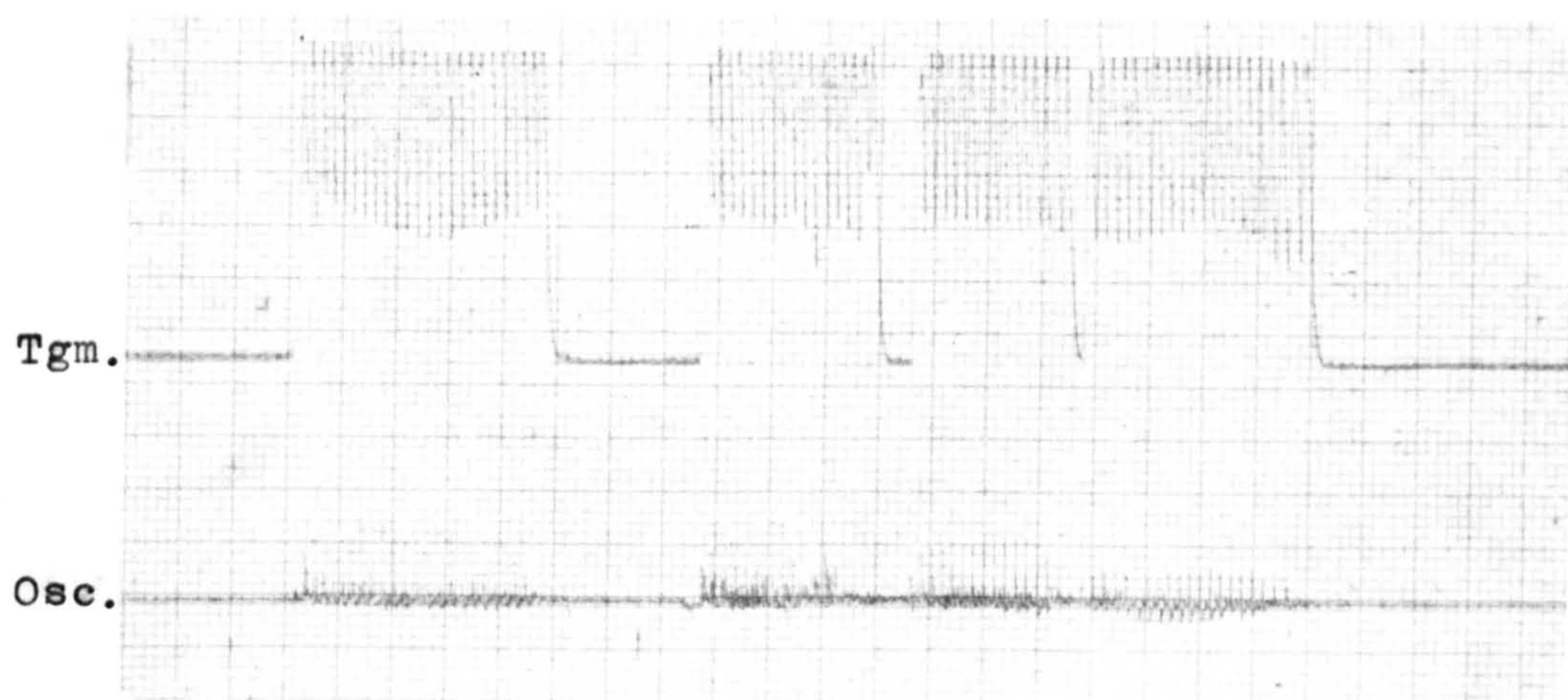


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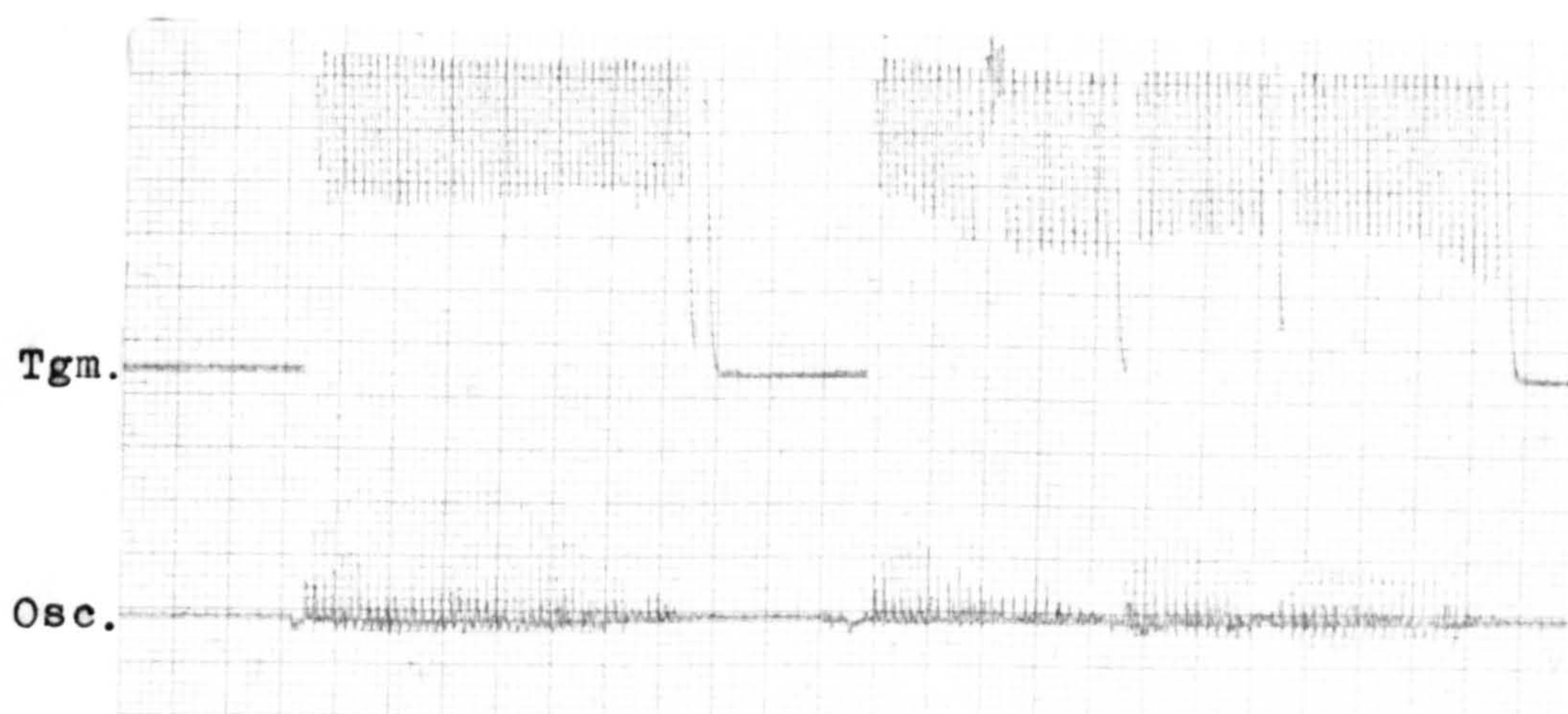


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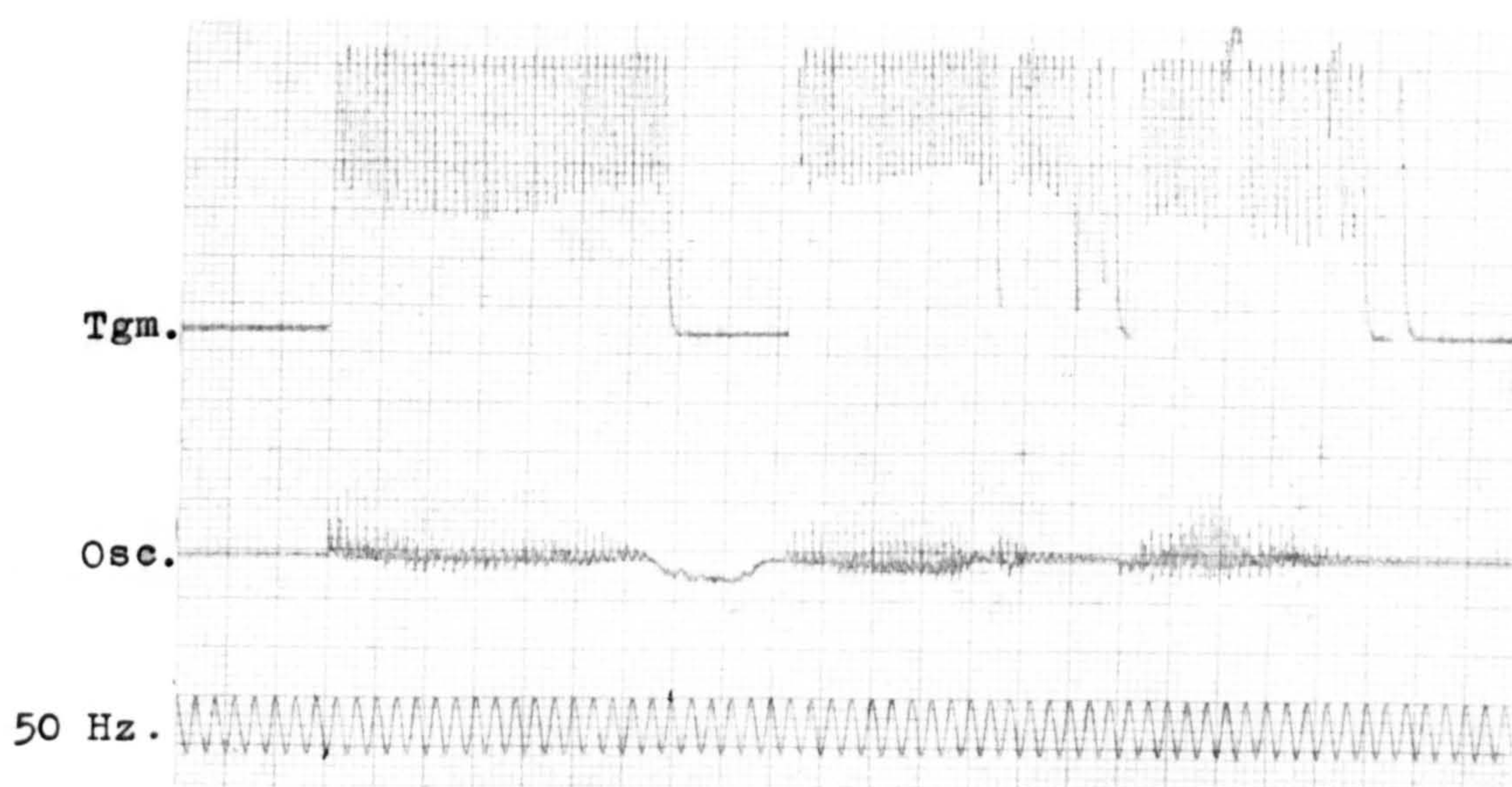




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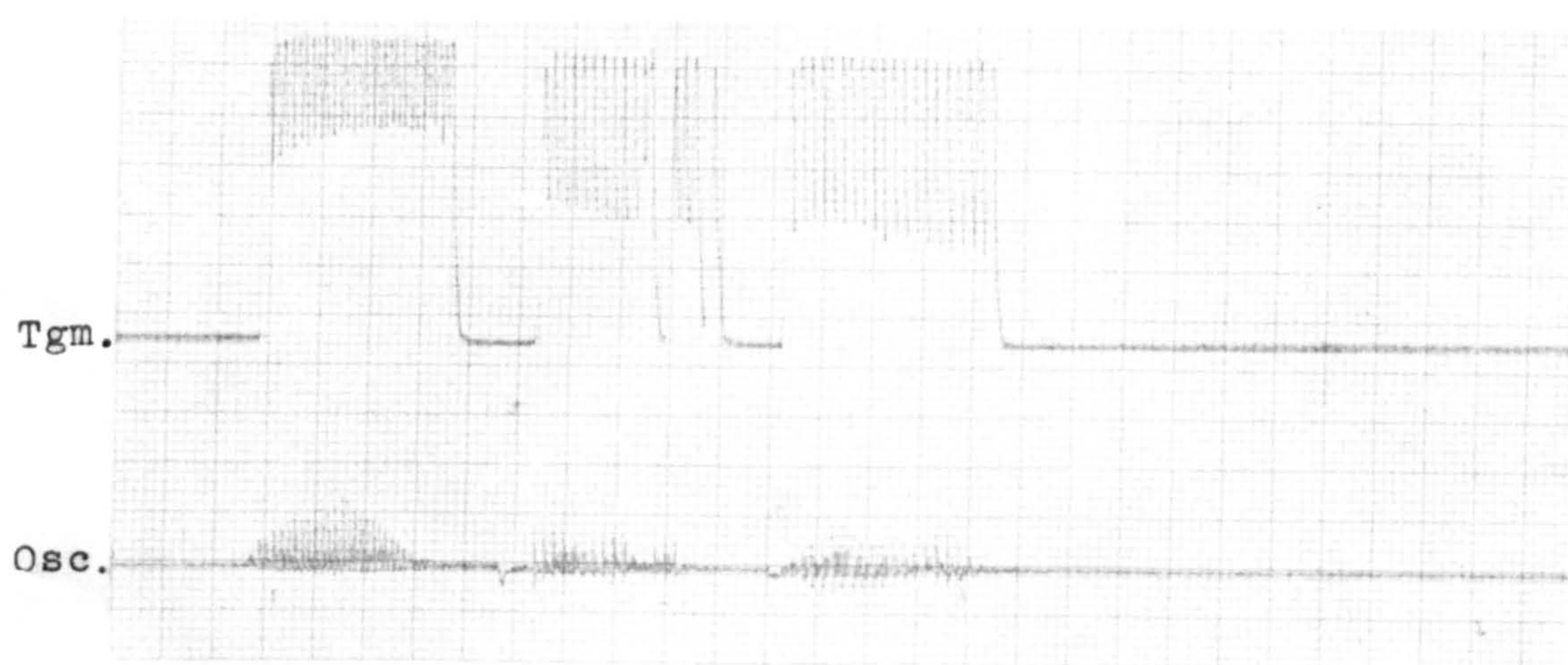


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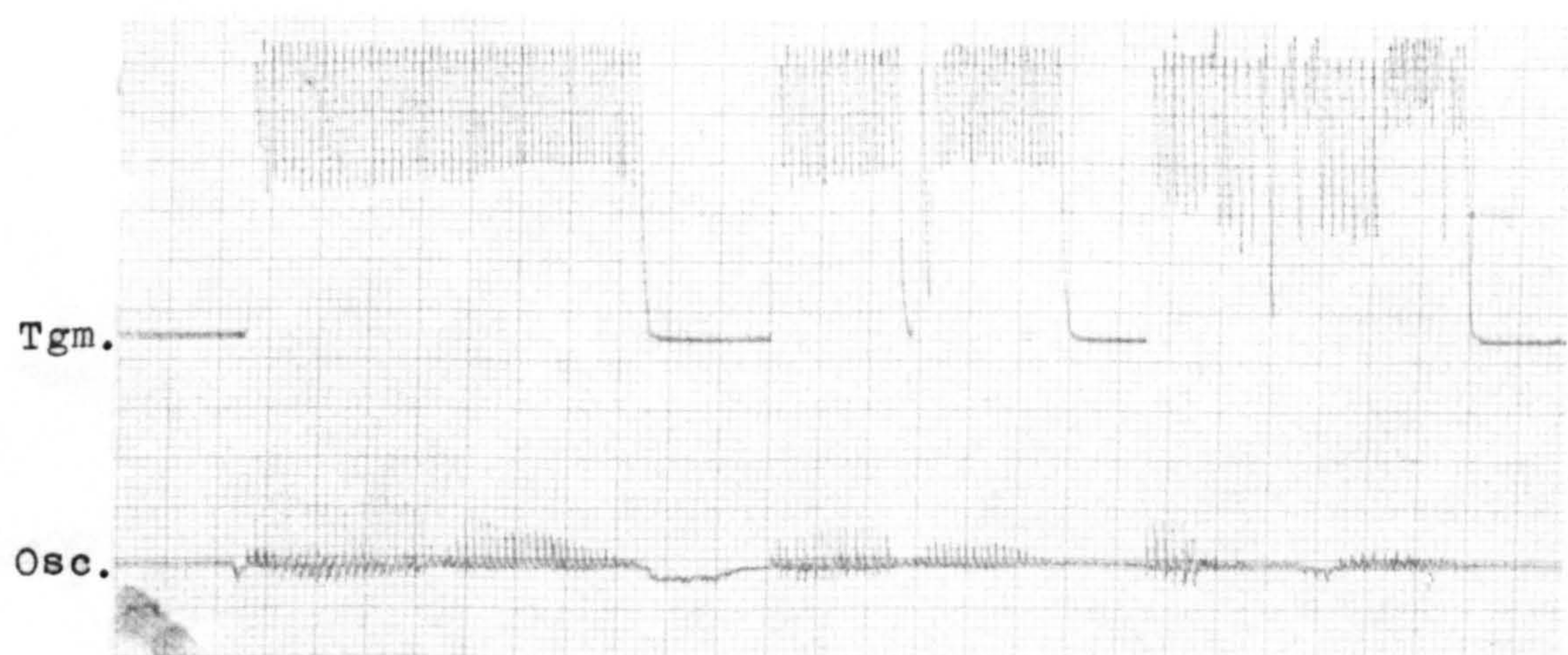


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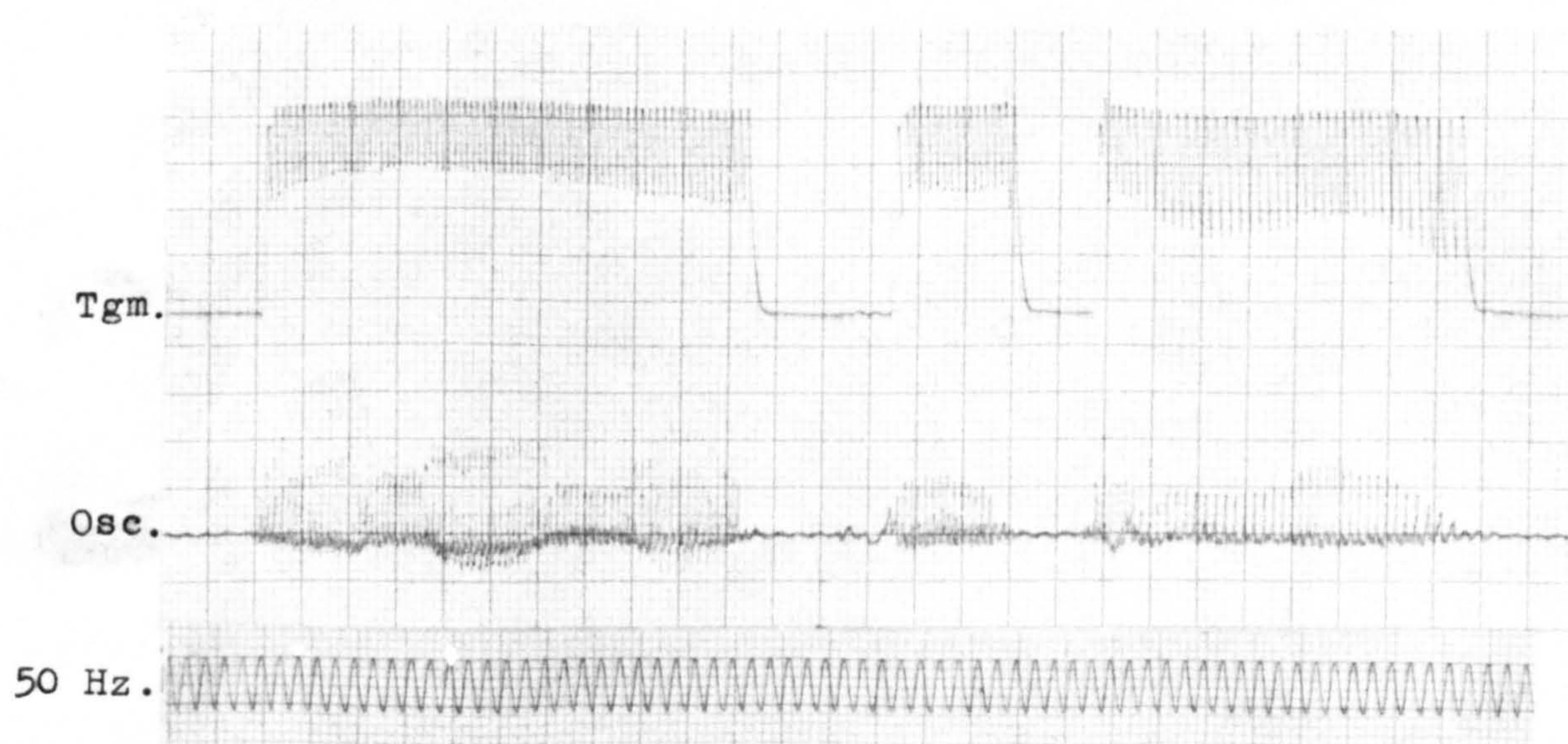




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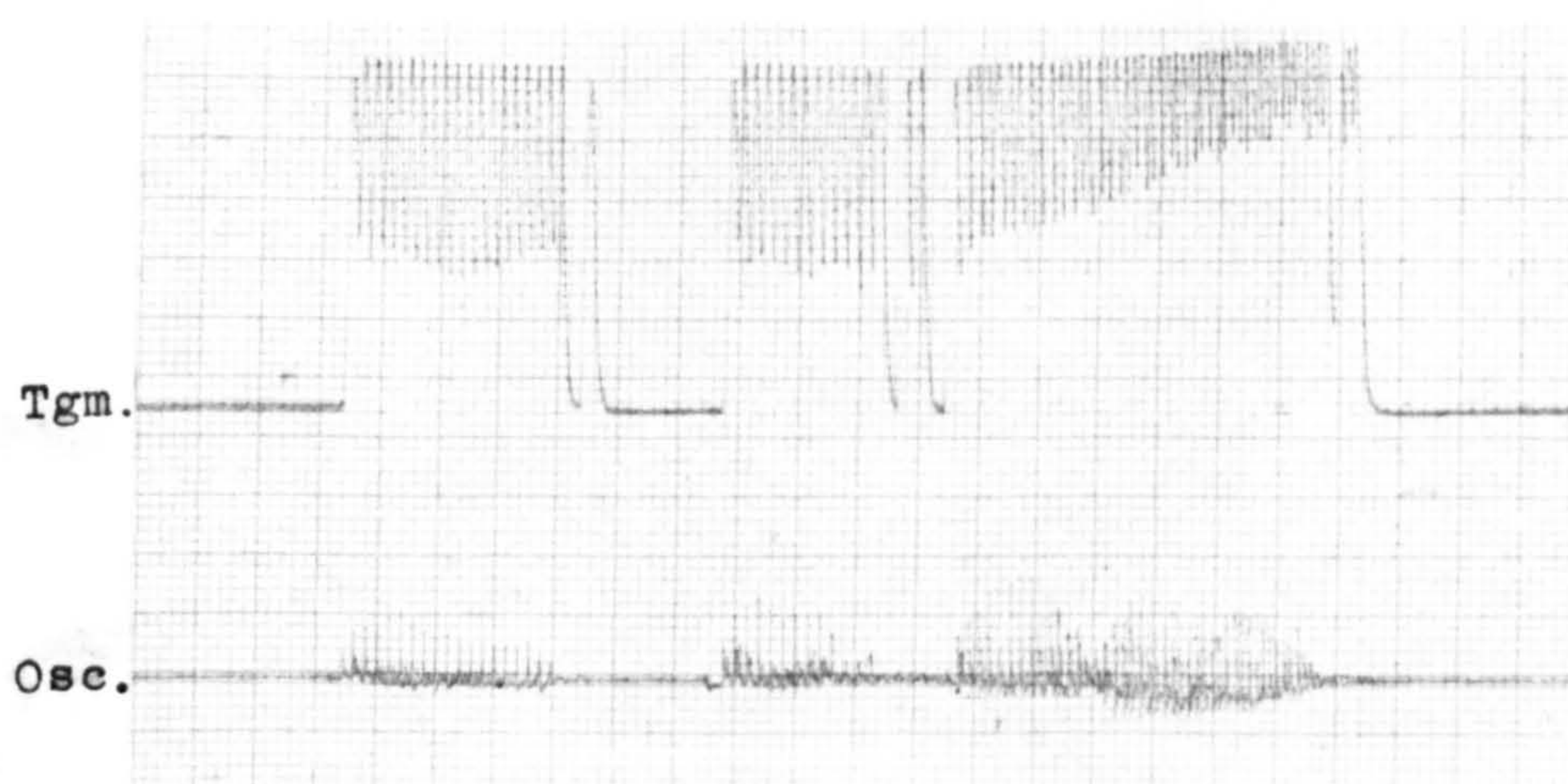


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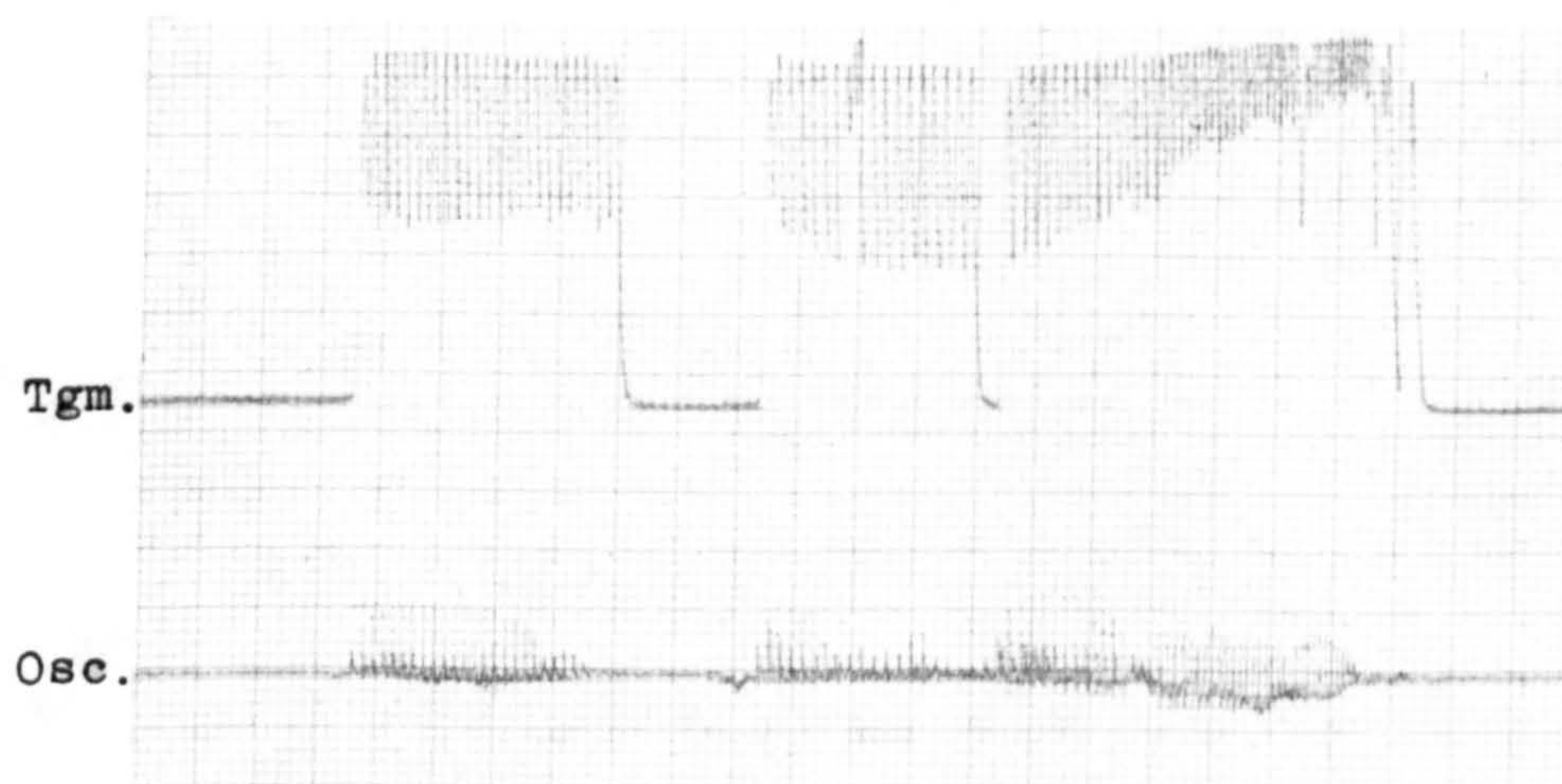


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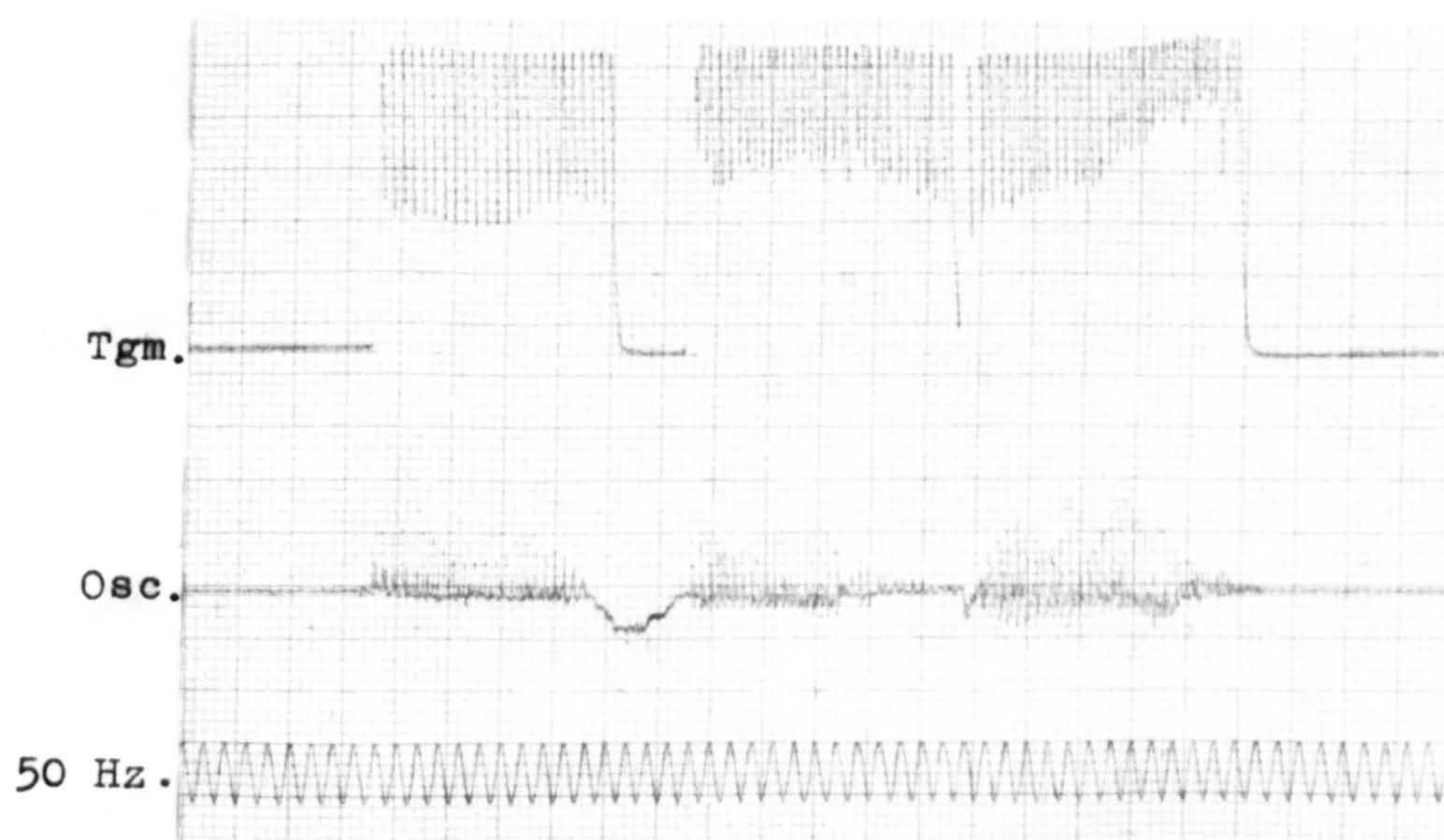




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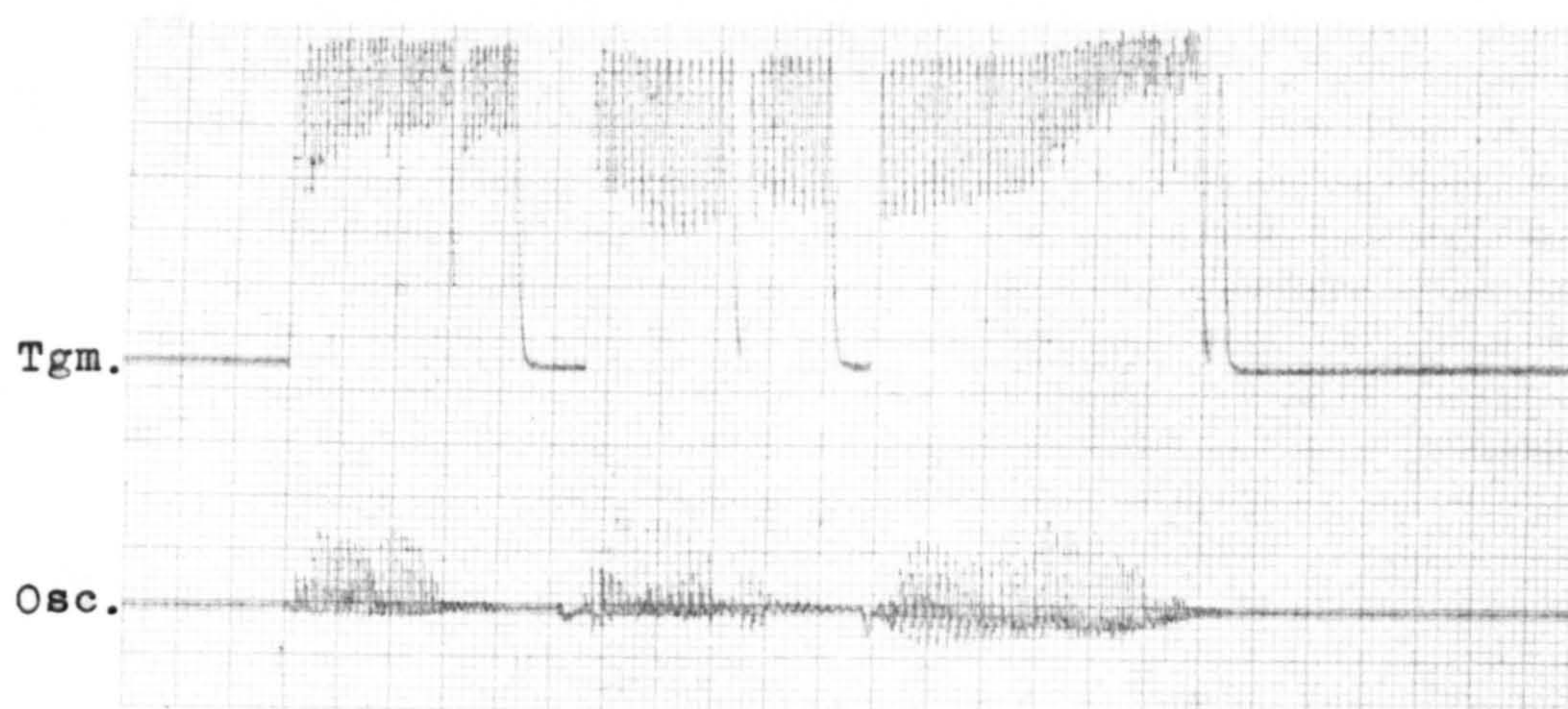


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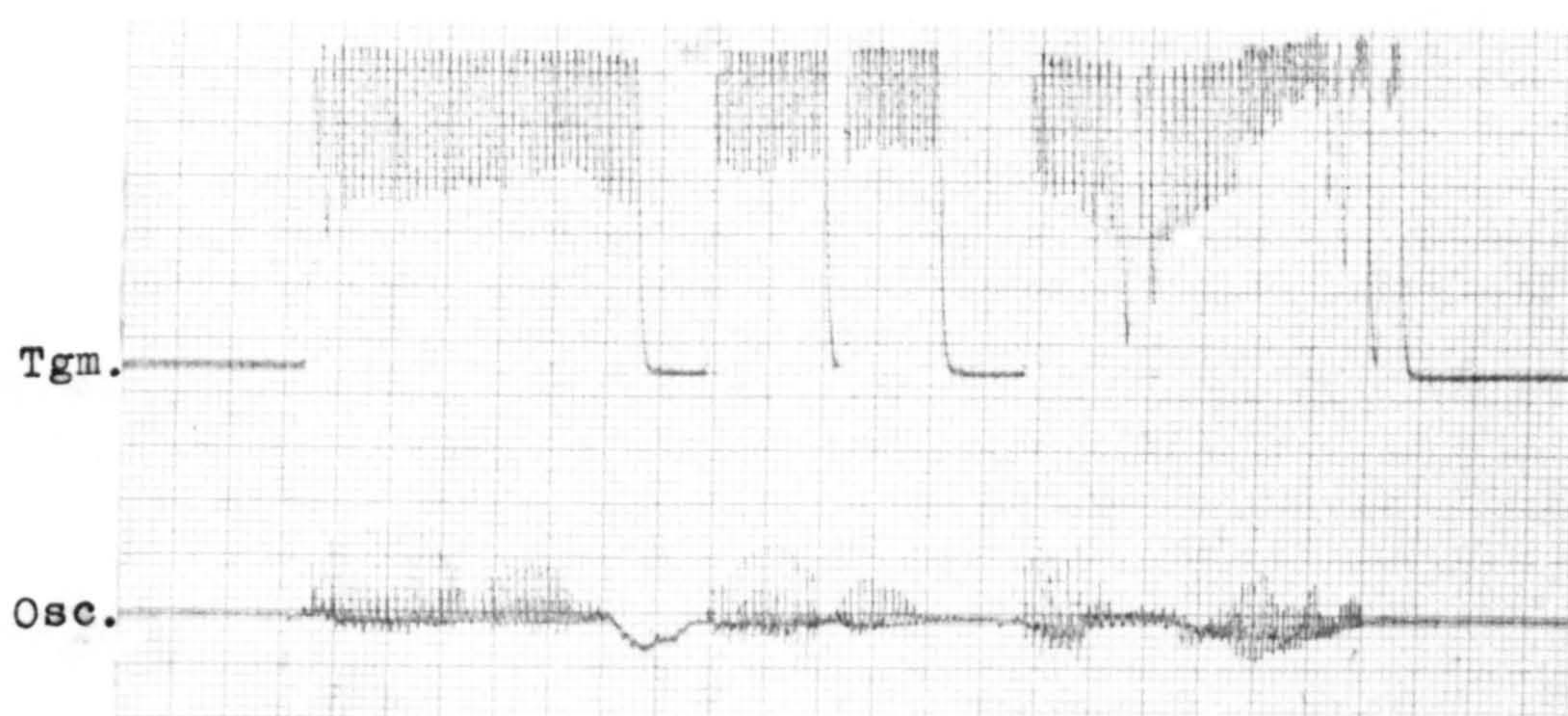


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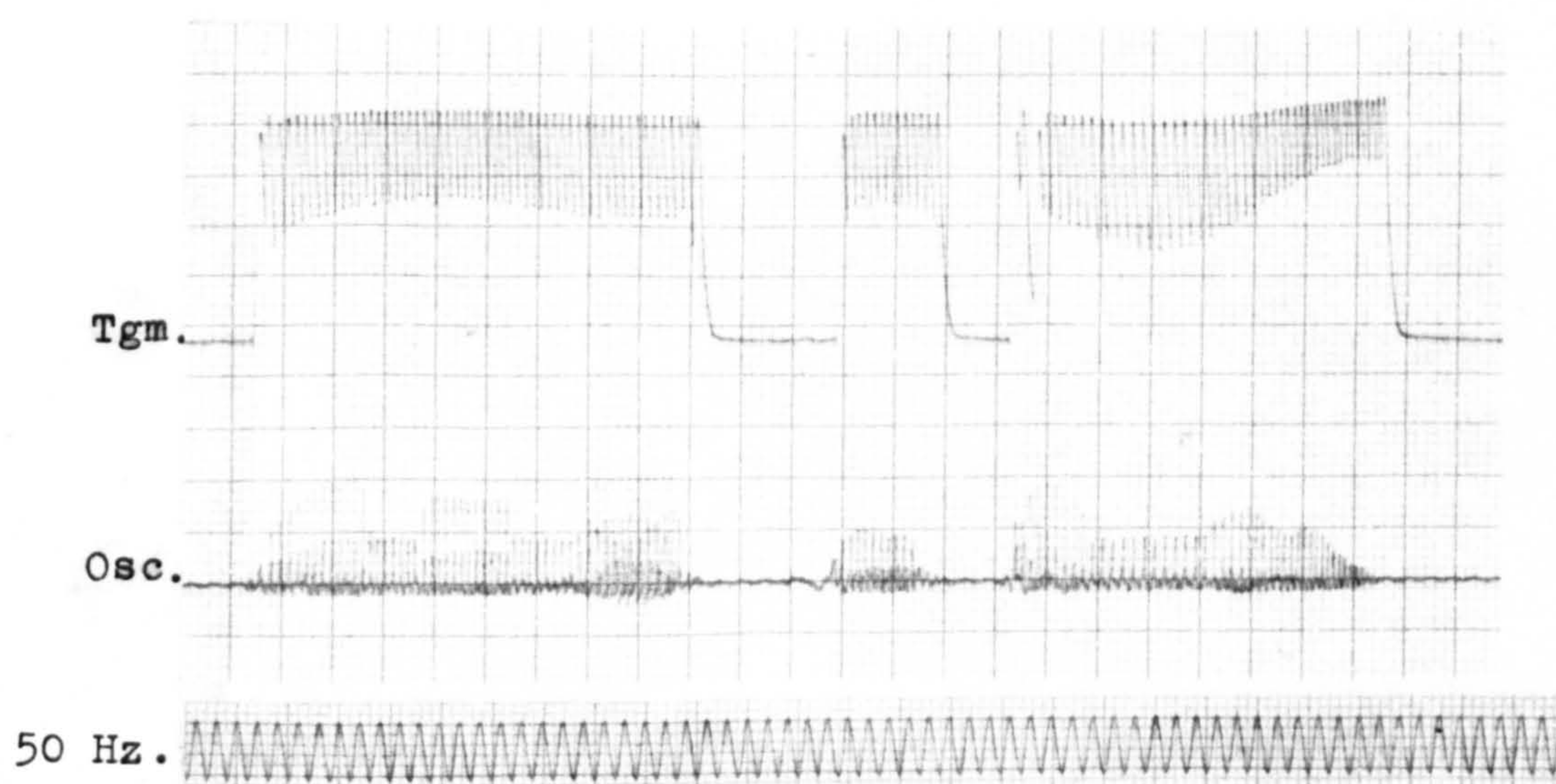




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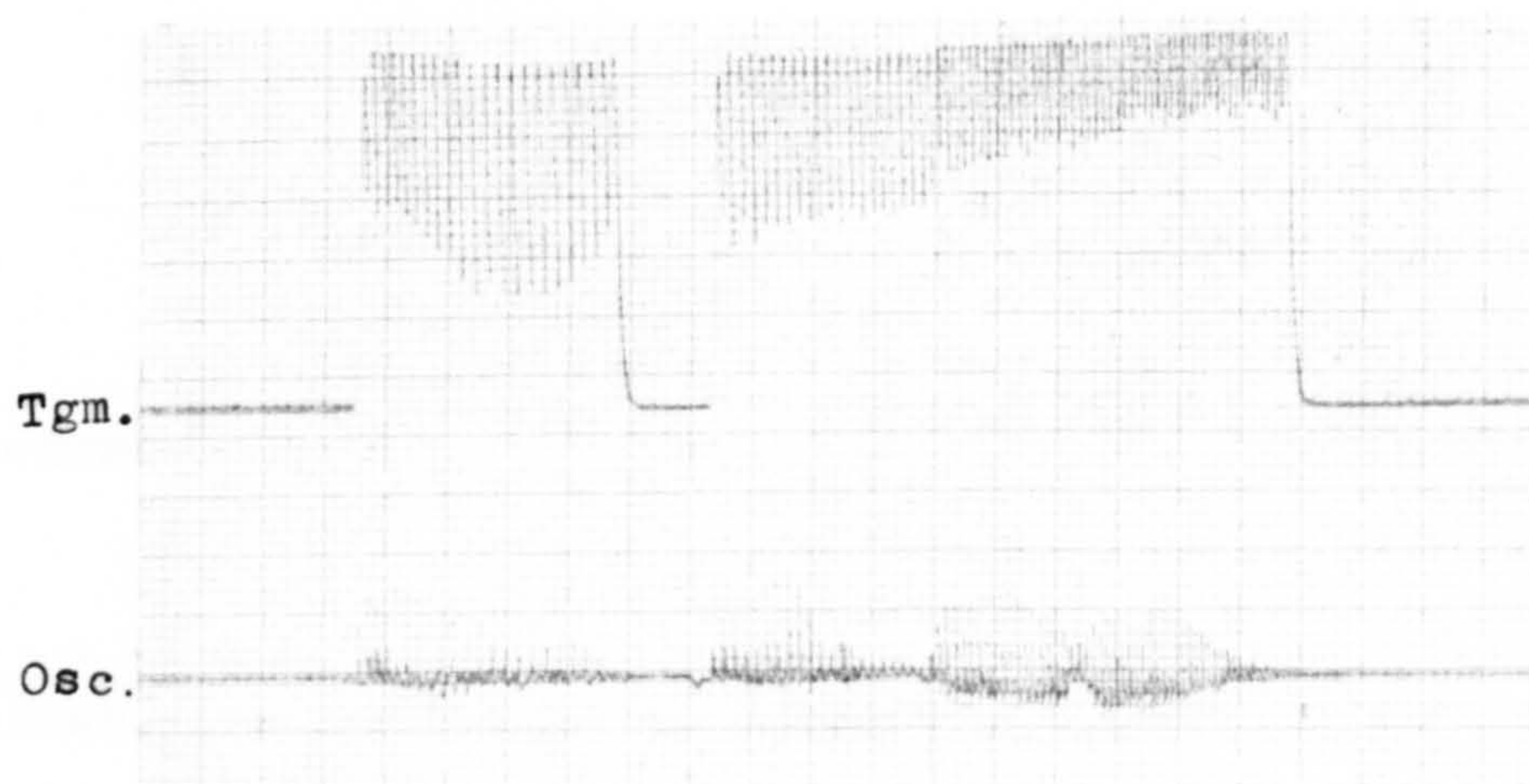


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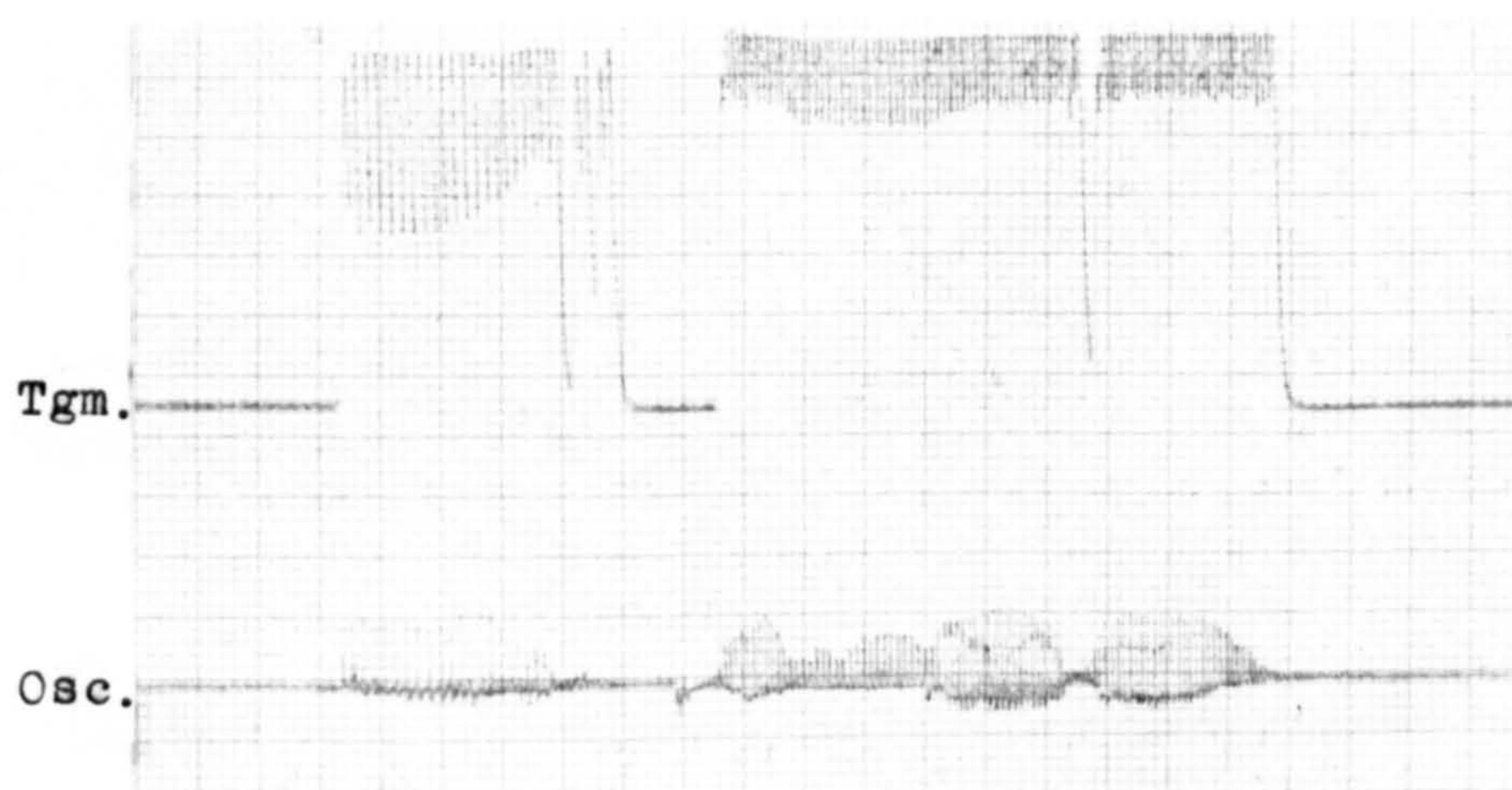


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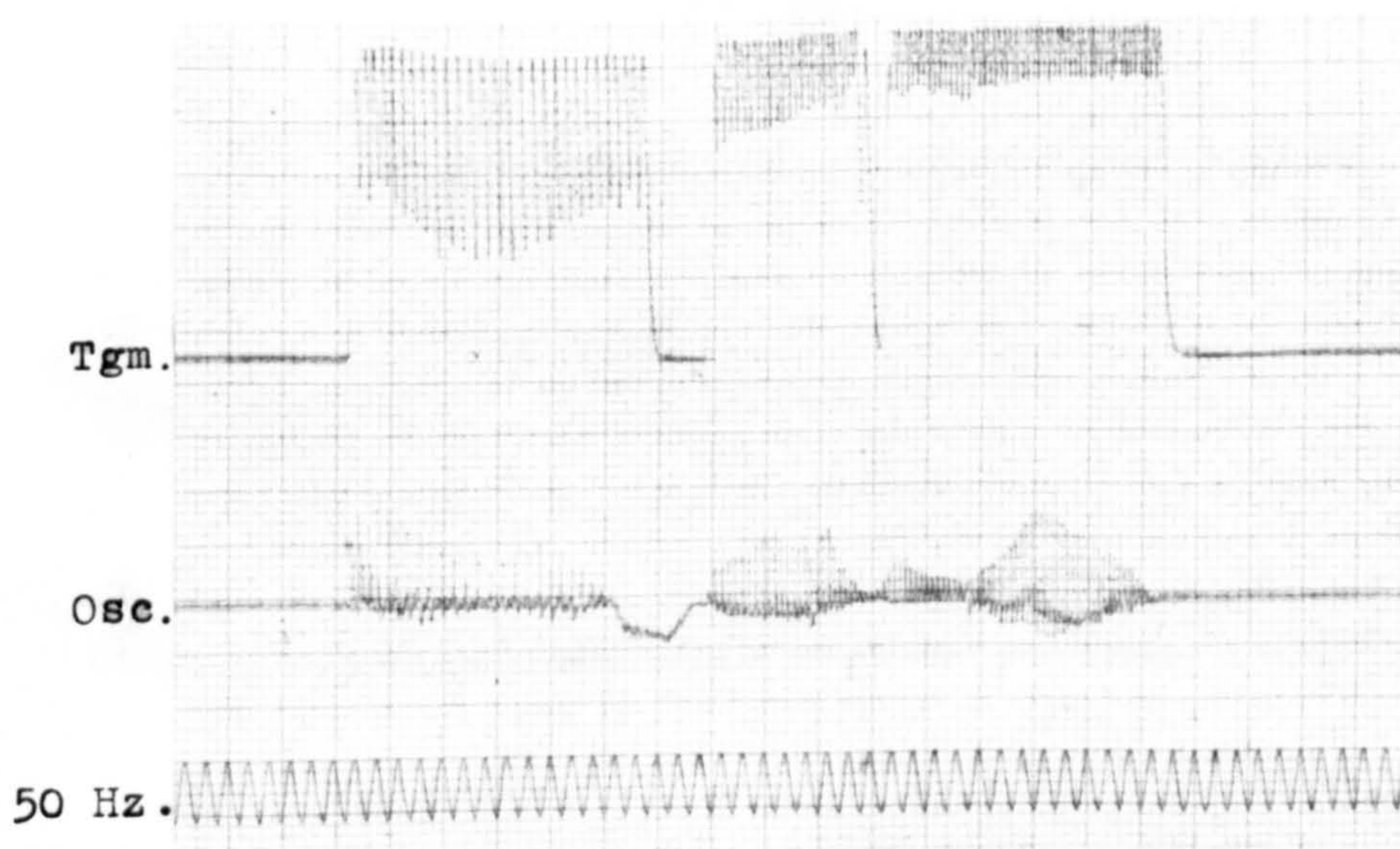




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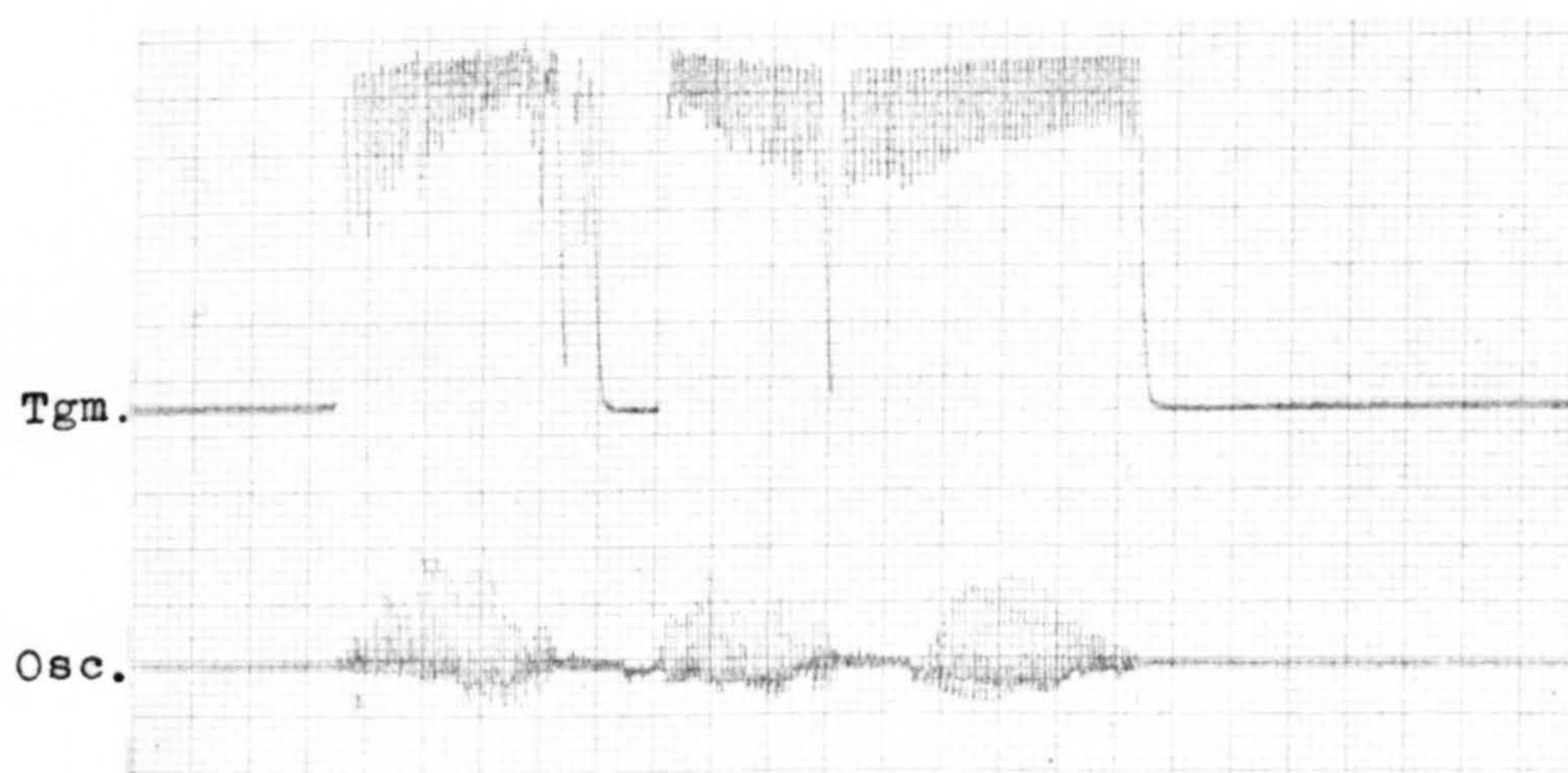


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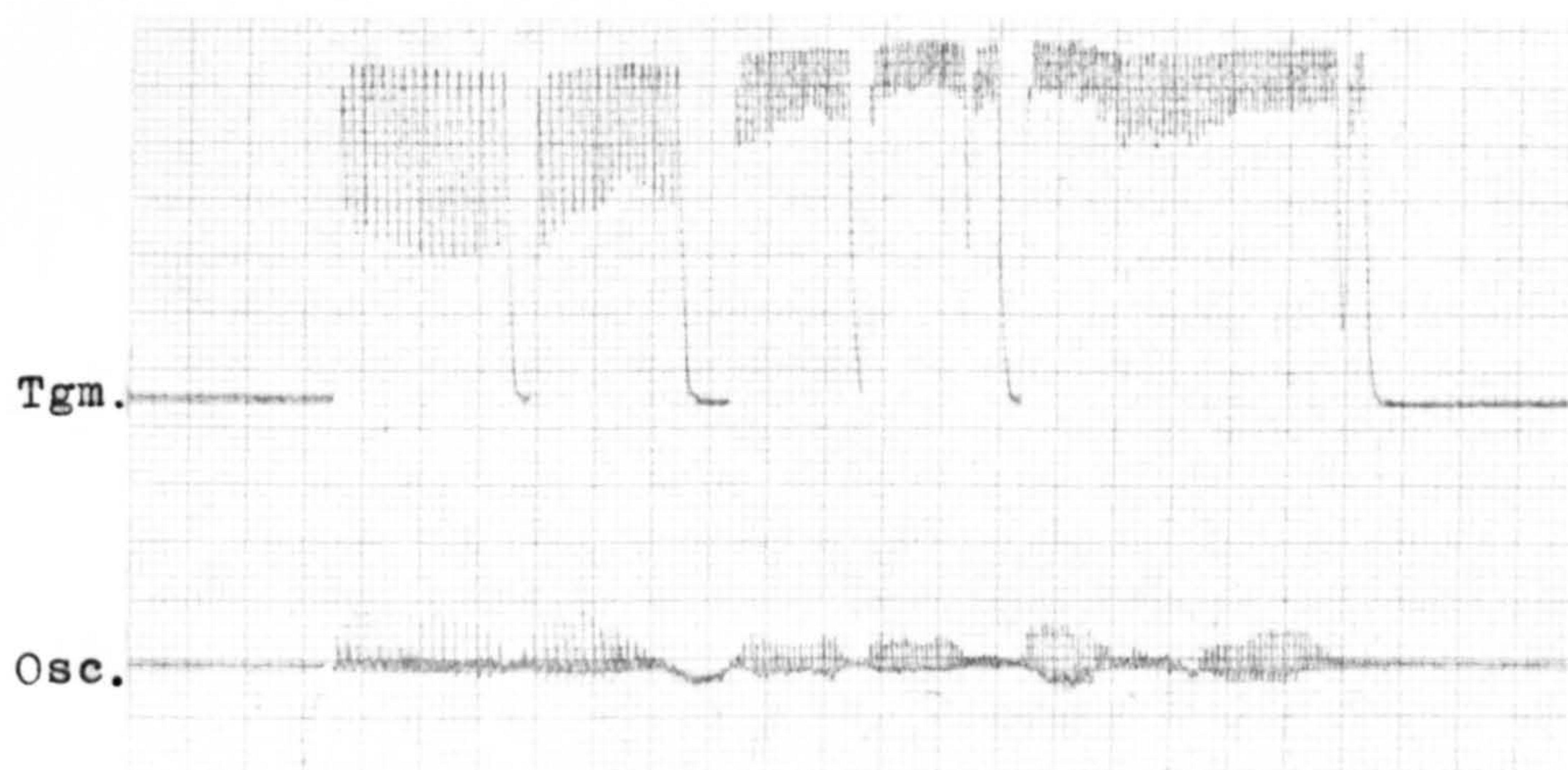


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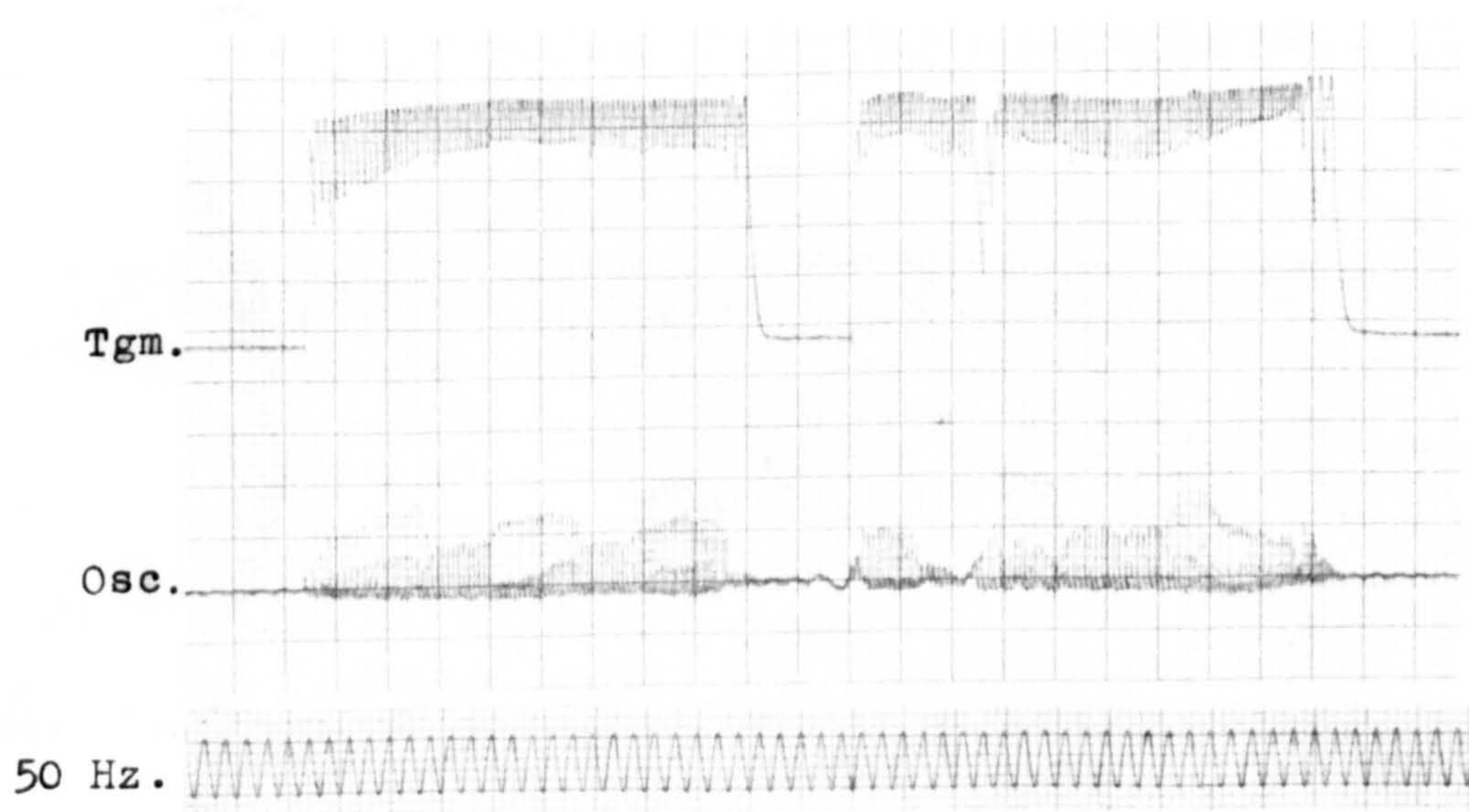




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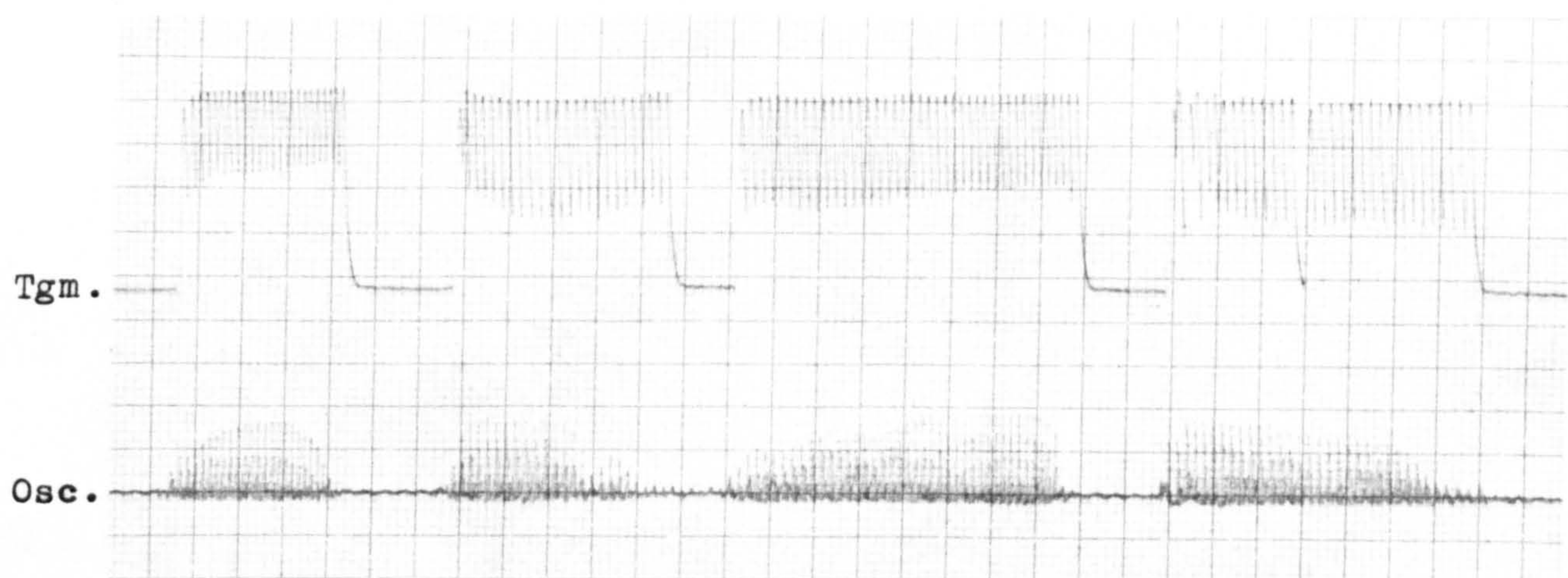


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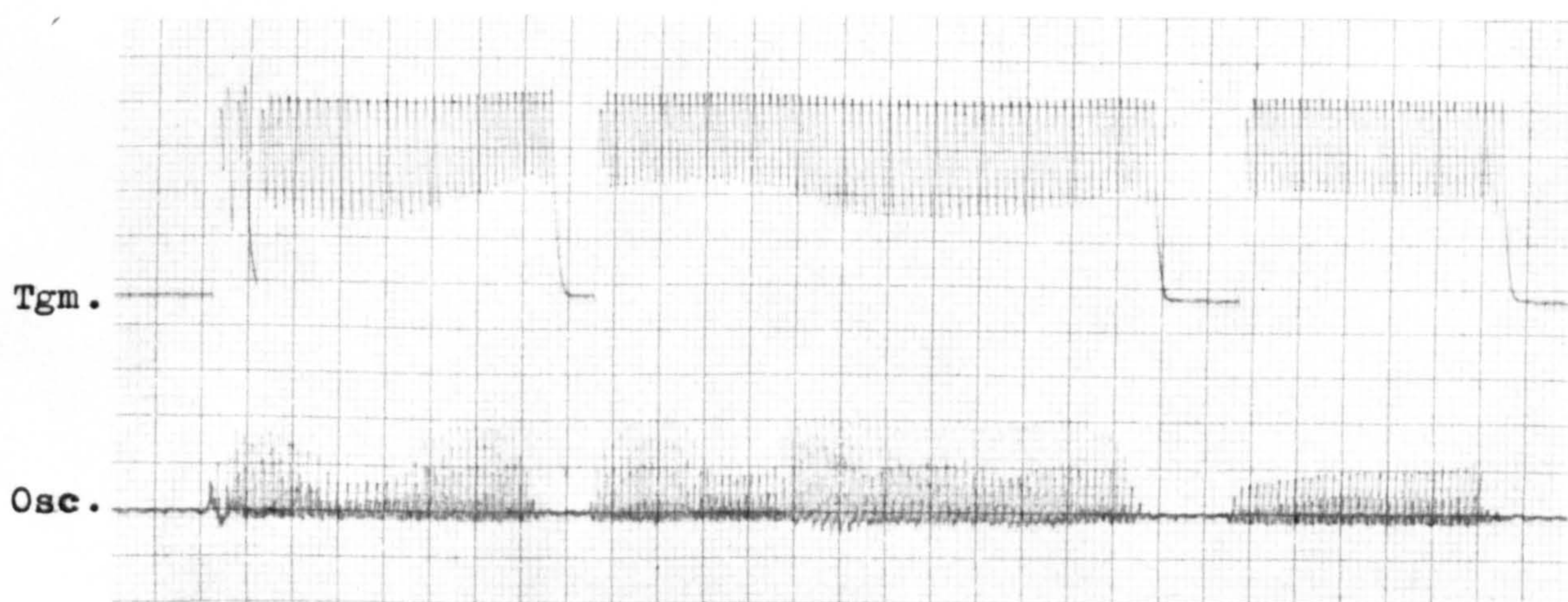


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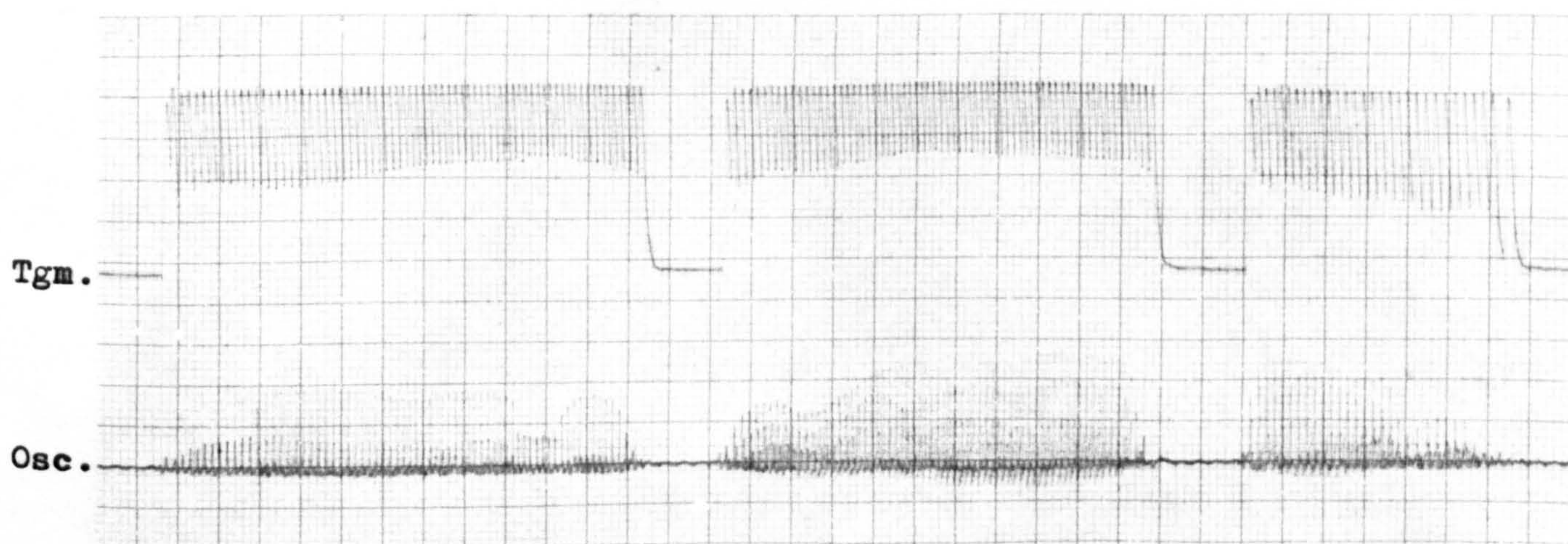




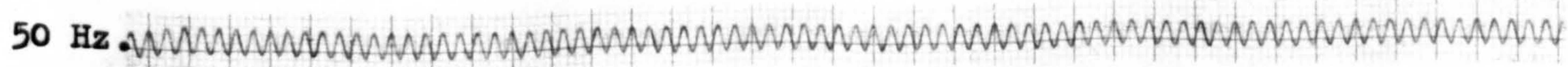
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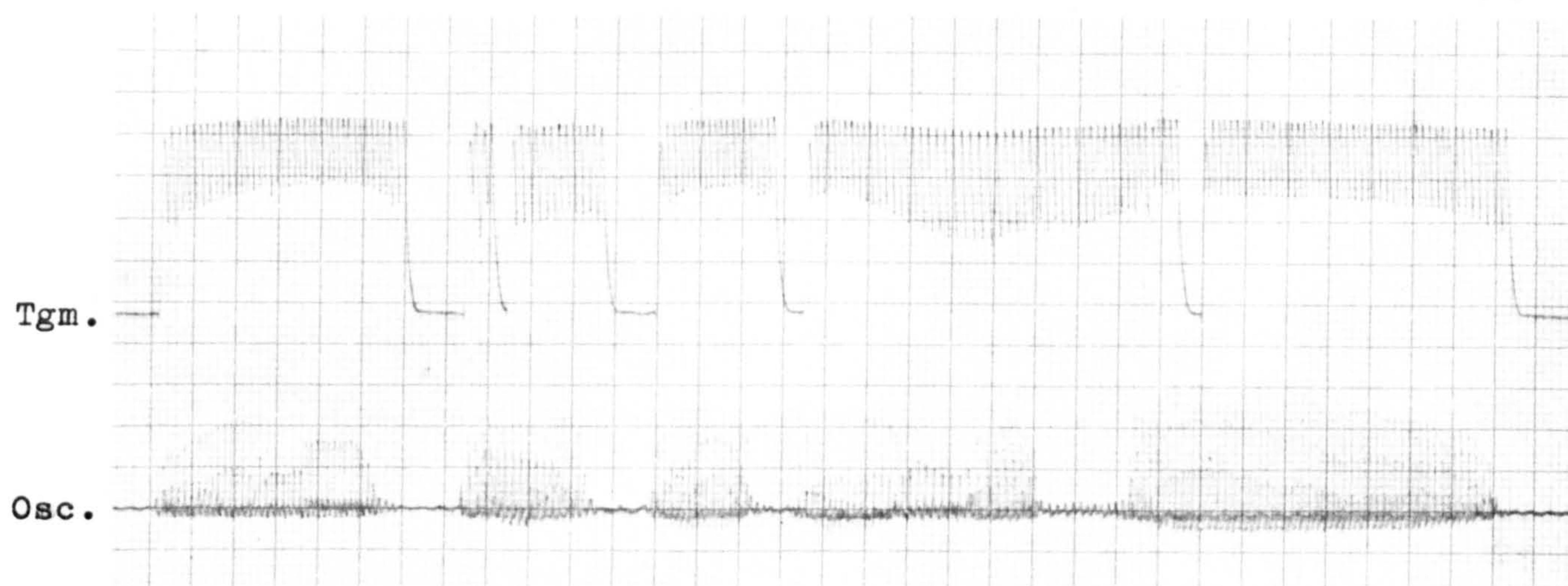
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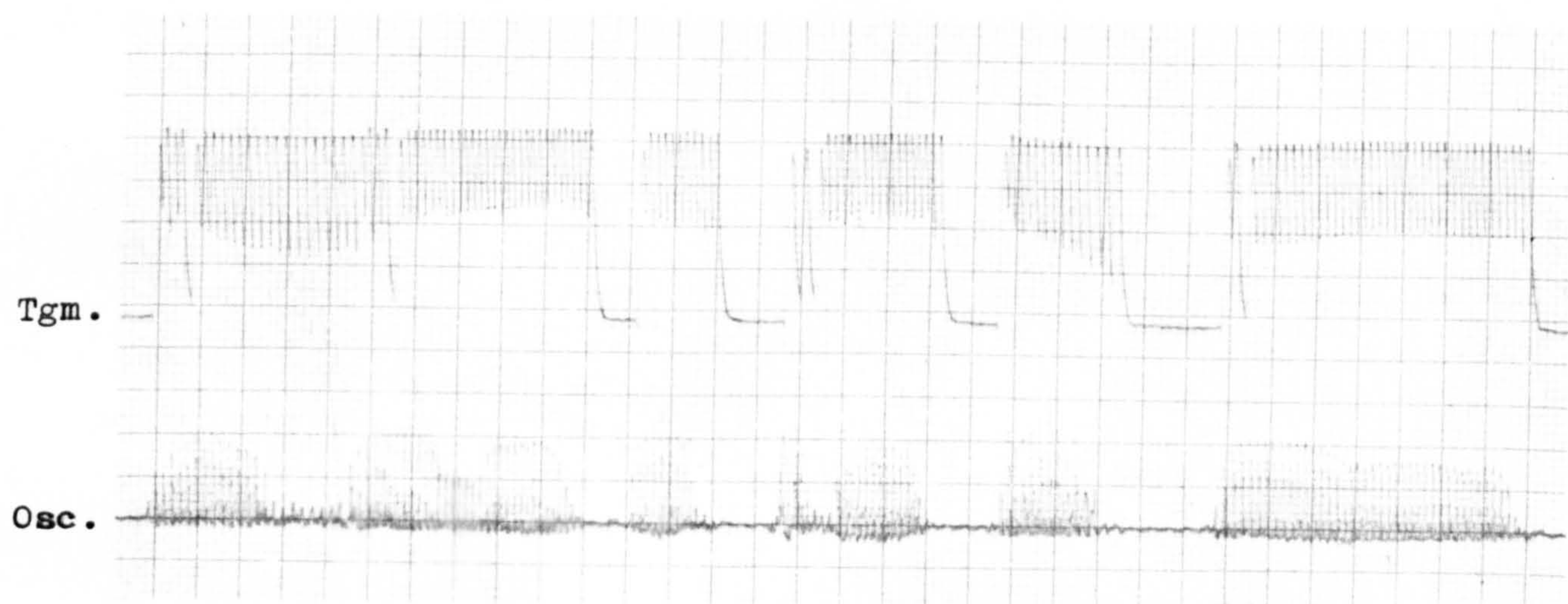
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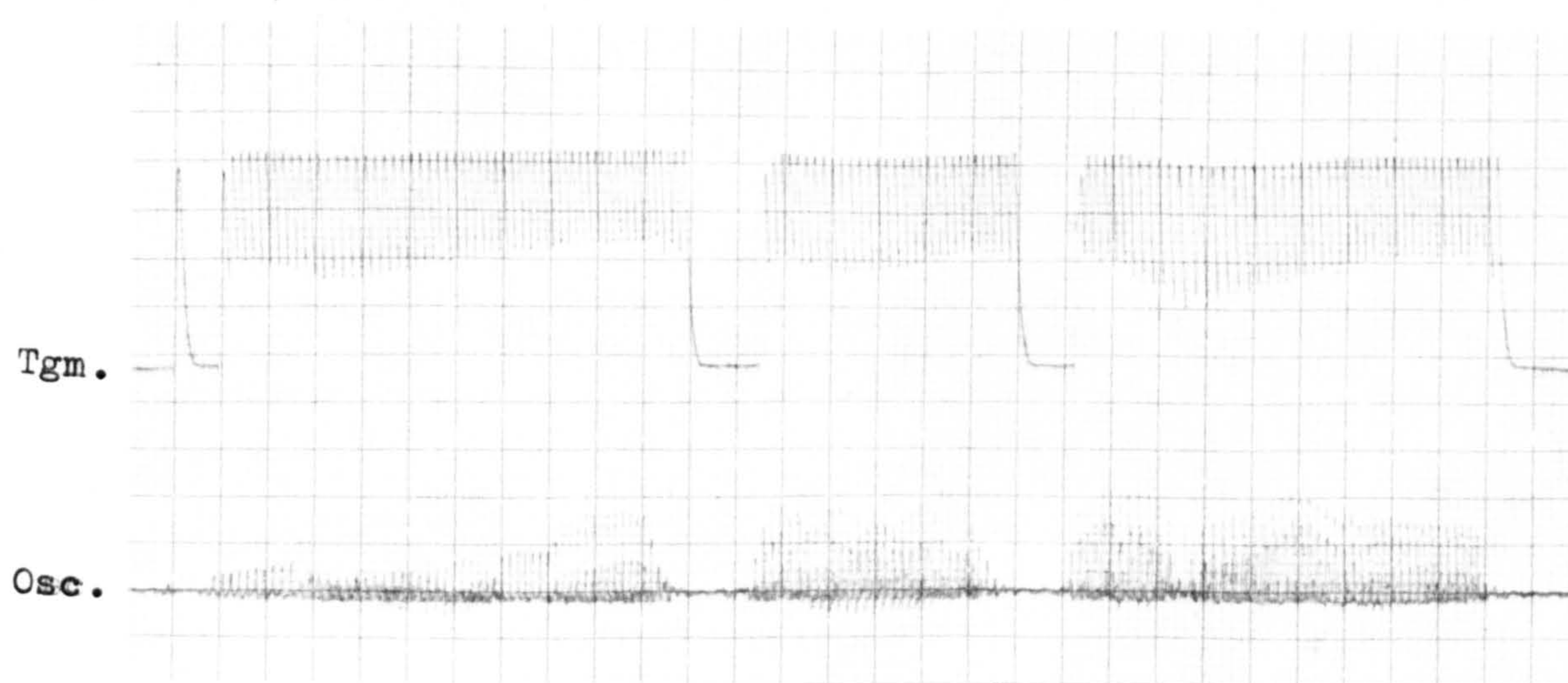




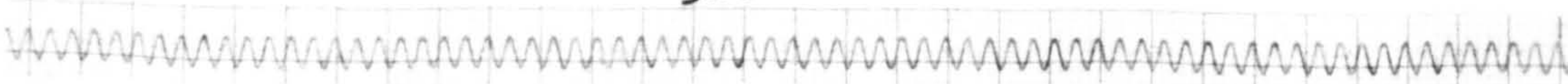
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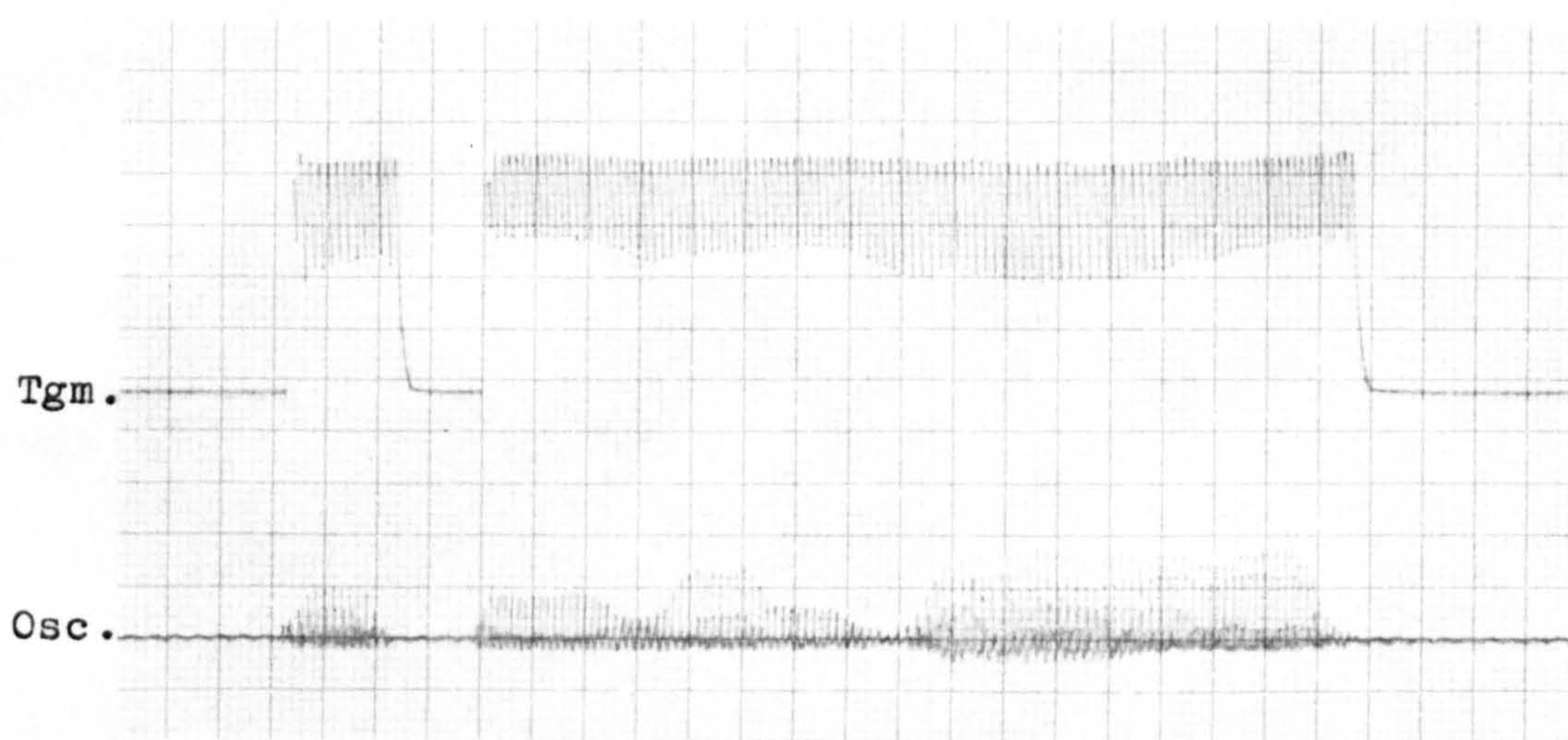
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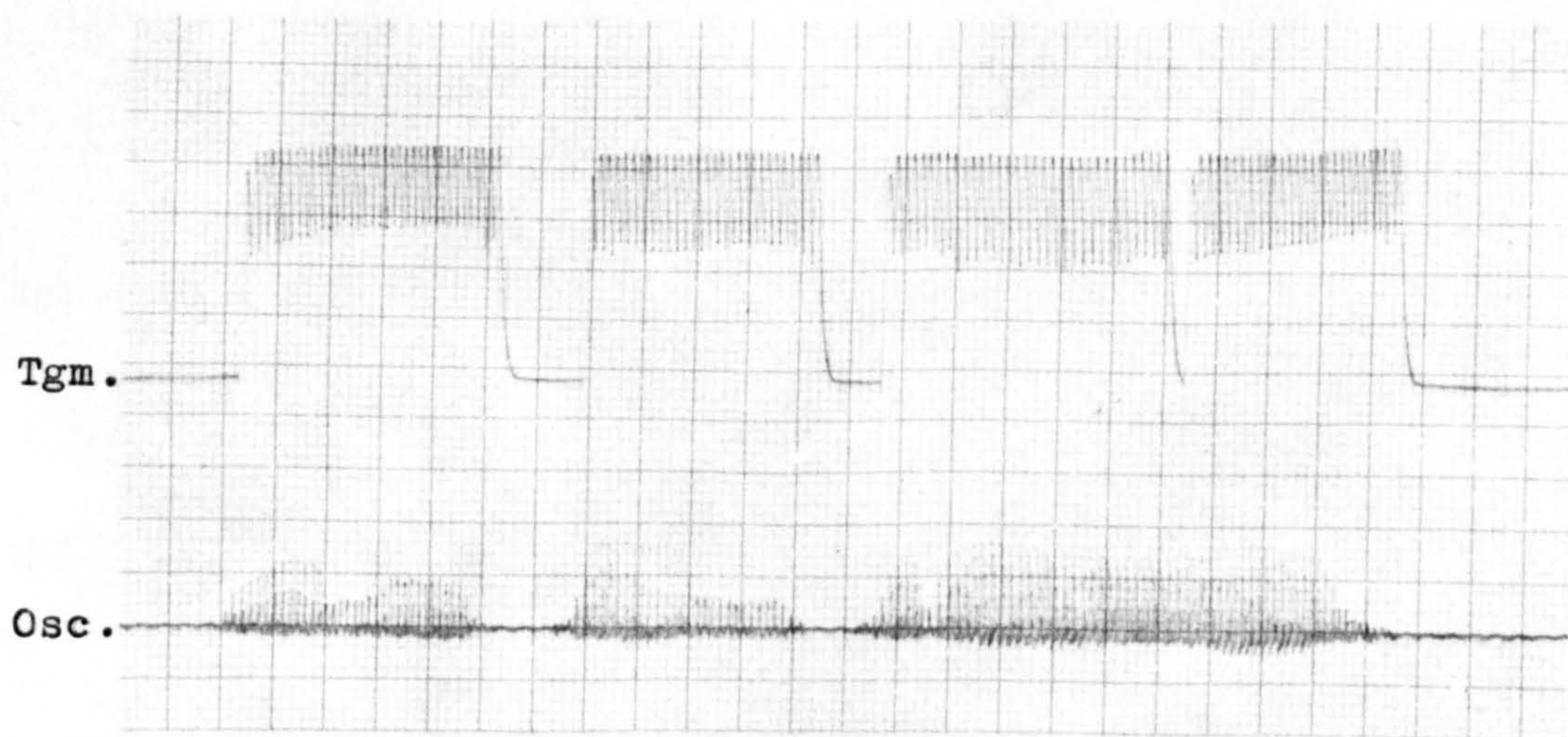
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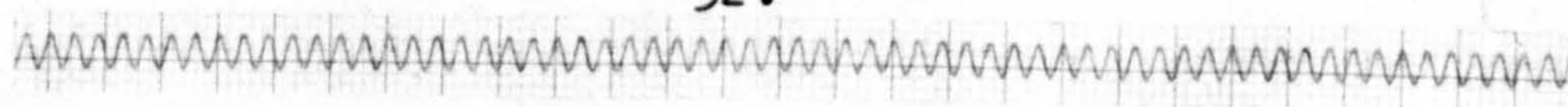




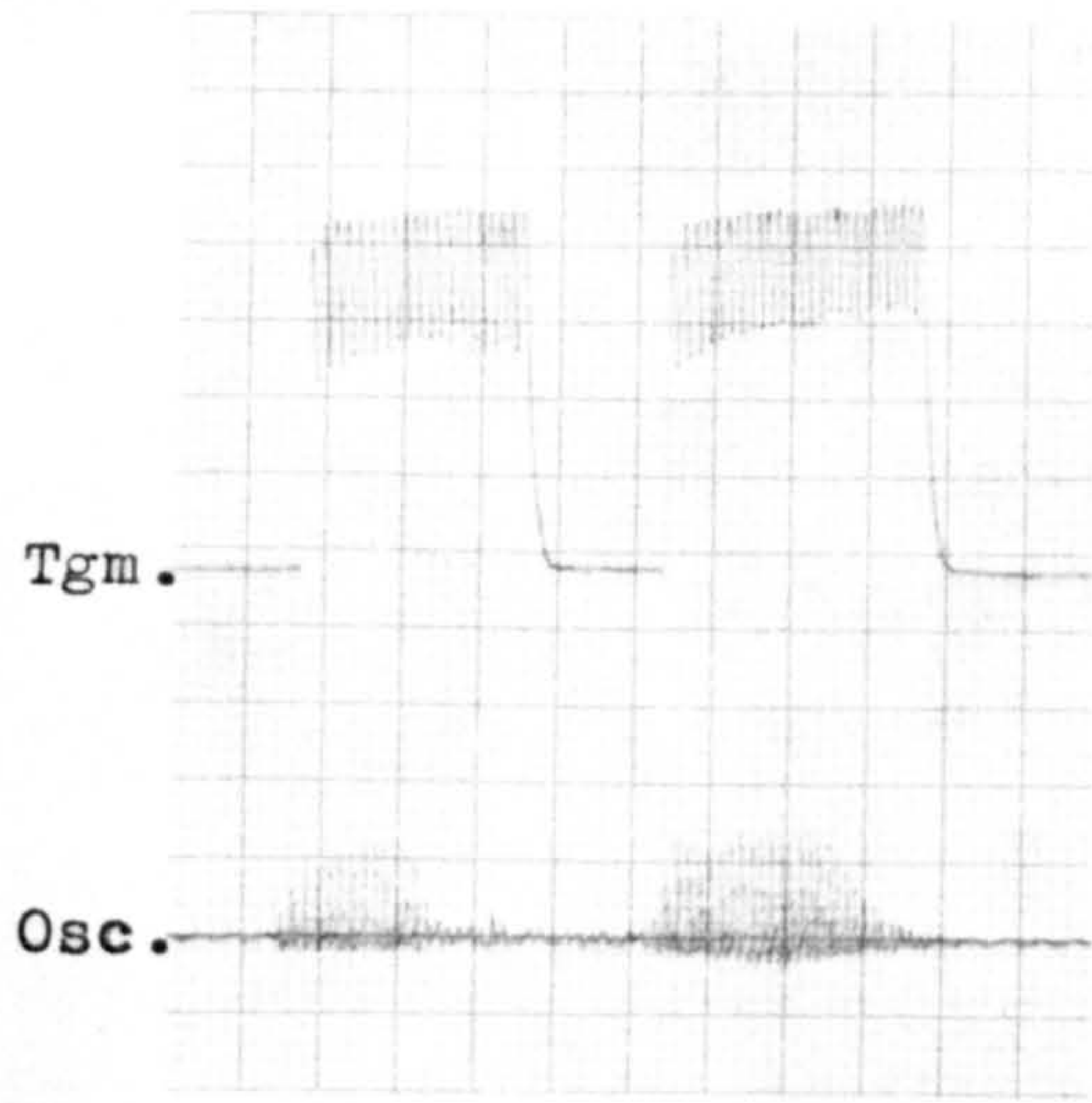
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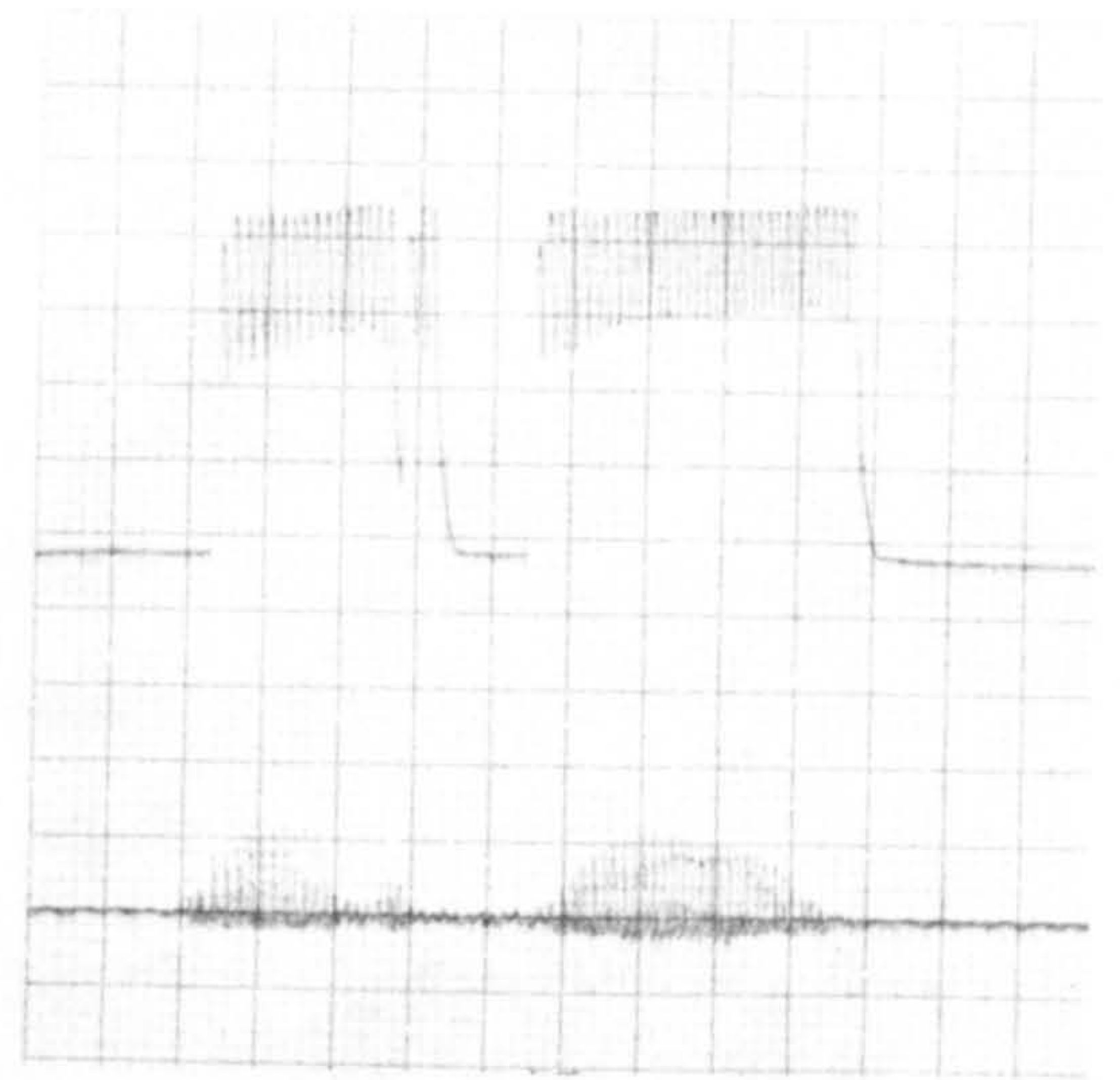
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50 Hz. 

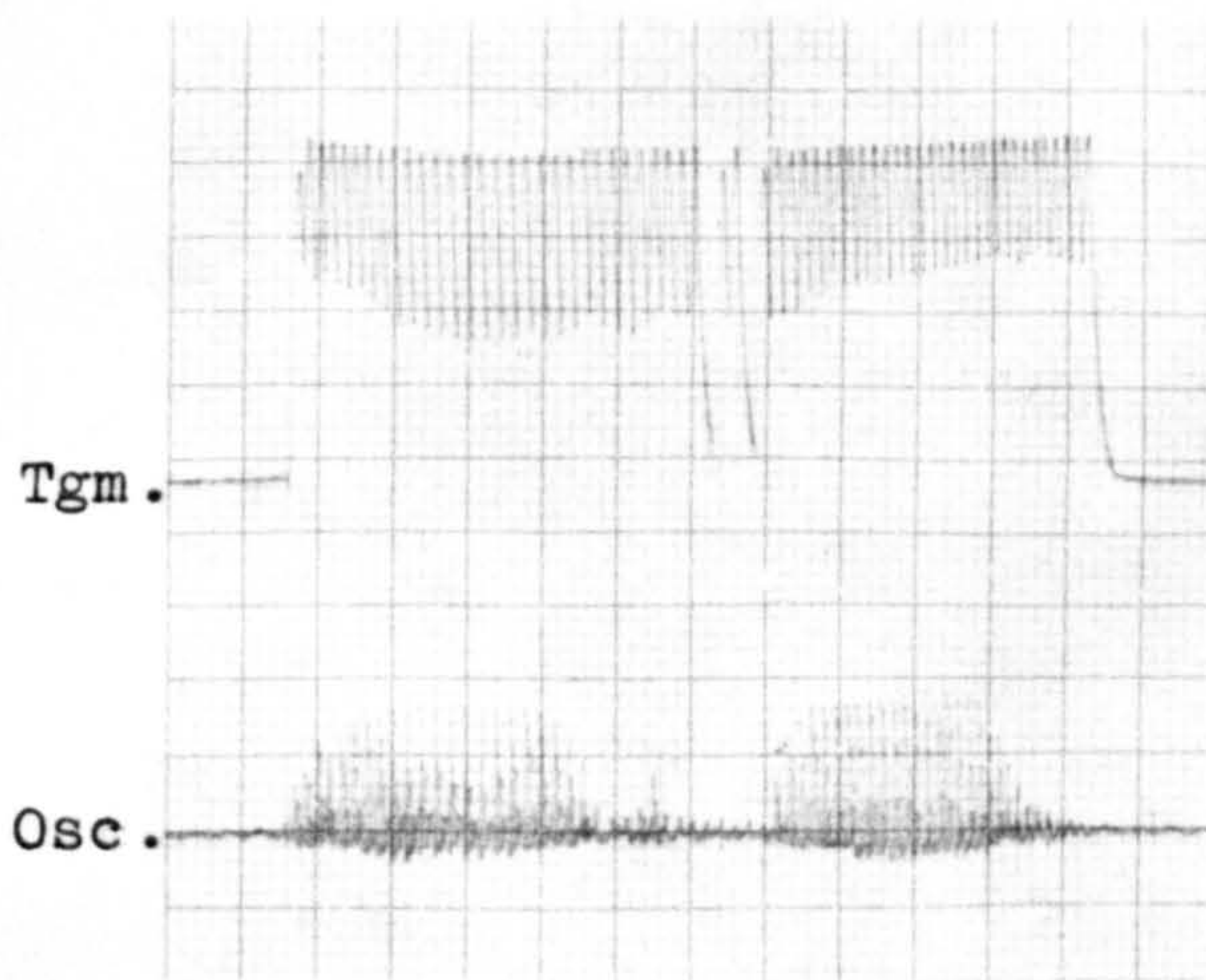




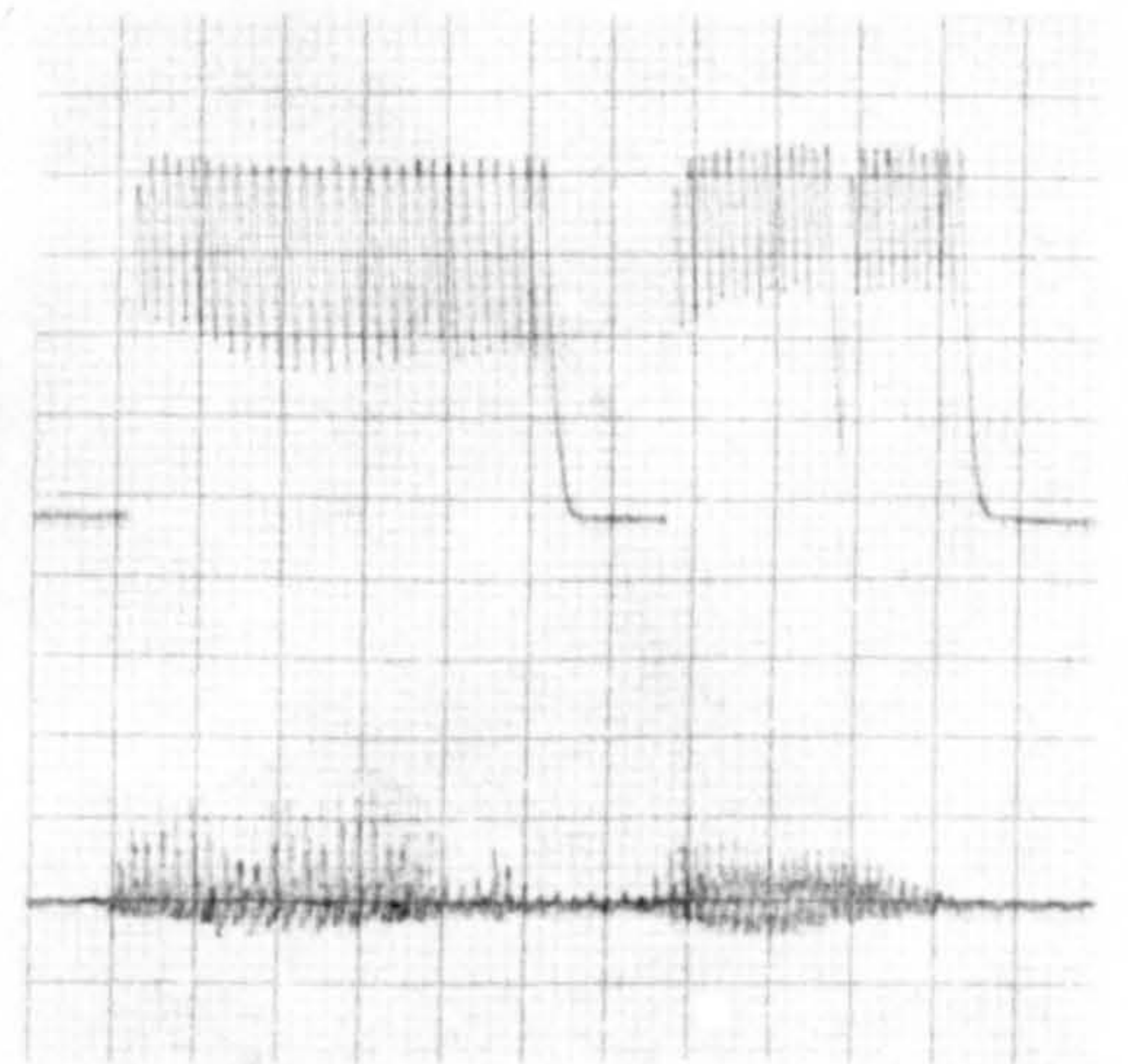
33.



34.



35.



36.





B I B L I O G R A P H YABBREVIATIONS

BSOAS	Bulletin <sup>of the</sup> School of Oriental and African Studies.
DJ	In Honour of Daniel Jones, David Abercrombie et. al., Eds., London 1964.
IL	Indian Linguistics, Poona.
JRF	In Memory of J.R. Firth, C.E. Bazell et. al., Eds., London, 1966.
PS	Pākha Sanjam, Patiala.
Papers	J.R. Firth, Papers in Linguistics, 1934-51. London, OUP, 1951.
SLA	Studies in Linguistic Analysis Special volume of the Philological Society, 1962.
TPS	Transactions of the Philological Society.
IJAL	International Journal of American Linguistics.
JIPA	Journal of the International Phonetic Association.
CJL	Canadian Journal of Linguistics.



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